

TECHNOLOGY DEPT.

SEP 1956
TECHNOLOGY



Approach

NAVAER 00 75-510

THE NAVAL AVIATION SAFETY REVIEW

Vol 2 # 6
PUBLIC LIBRARY
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CHRISTMAS CAROL

page 4

Fellow by the name of Dickens did pretty well with "A Christmas Carol" that has become something of a yuletide tradition. Now just suppose, we said to ourselves, that Mr. D. were given the task of presenting a problem in aircraft accident prevention. He might come up with some squadron characters like Commander Scrounge, or Lcdr. Bob Scratchit or Ens. "Tiny" Timm, who could give the safety story a new twist...



Ever thumb through an old flight log book, to be reminded of a particularly rugged incident whose details have been compressed into a routine entry of a few figures and symbols? Some of aviation safety's finest material, we believe, is contained in such simple chronicling. Sometimes we run across the whole story behind such a Log Entry...

LOG ENTRY

page 24



Though liquid oxygen was used to fire artillery shells way back in WWI by the Germans, for today's tigers, however, it provides new performance advantages. But its virtues are not without fault and those faults mechs need to know. So here's the word, from aero-medical and equipment people at BuAer, Pax River and North American Aviation Inc.

LOX

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This periodical contains the most accurate information currently available on the subject of aviation accident prevention. Contents should not be construed as regulations, orders or directives unless so stated. Material extracted from Aircraft Accident Reports, OpNav Form 3750-1 and Anymouse (anonymous) Reports may not be construed as incriminating under Art. 31, UCMJ. Names used in accident stories are fictitious unless stated otherwise. Photo Credit: Official Navy or as credited. Original articles may be reprinted with permission. Contributions are welcome as are comments and criticisms. Address correspondence to Director, U. S. Naval Aviation Safety Center, NAS Norfolk 11, Va.

Printing of this publication approved by the Director of the Bureau of the Budget, 9 Dec 1954. Published monthly, this magazine may be purchased from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Single copy 30 cents; 1-year subscription \$2.50; 75 cents additional for foreign mailing.



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Welcome Aboard,

St. Nick!

Pretty well buried, we suspect, beneath the tremendous mass of prose and poetry generated each year on the subject of Christmas, there's a bit of unexploited information which seems to be of particular interest to our readers.

It has to do with a not-too-well-known aspect of the original St. Nicholas—not, mind you, the jolly old St. Nick of the “Night Before Christmas,” but the interesting and devoted man who, during the Third Century, traveled abroad considerably from his home in Asia Minor to become a legend and eventually a saint.

What isn't too widely known is the fact that St. Nicholas was regarded throughout most of Europe as a patron saint of the *seafaring man*, with many accounts recorded of his protective influence over the voyagers of the ocean highways.

And because the men who comprise naval aviation are but seafarers of the sky oceans, it is but a simple and natural transition to extend the realm of St. Nicholas to the airways and those who travel there.

Oh, we recognize that Mister Average Aviator tends to snort and fidget uncomfortably at any at-

tempt to associate, directly, his profession with things spiritual — he just doesn't care to discuss these things. We're just as certain that there are no atheists in cockpits, nor breathes there any pilot beyond the solo stage who has not at one time or another marveled at the Something or Somebody that prevented his buying the farm when the down payment had already been made in the form of a pilot booboo.

While we don't endorse the philosophy of the fabled carrier pilot who, on being launched, two-blocked the throttle, folded his arms confidently over his chest, and on reaching 500 feet said: “Okay, God, I have it!”, we do offer our small Thought for Christmas as a rather pleasant reminder that one of the outstanding figures of Christmas-time is a plankowner member of the seafarers' union of which we are a part.

Which fact, assisted by a reasonable amount of Planning, Procedure and Pilot Technique in *your* flight operations, should make for a merrier Christmas this year and in the future.

P.S.: to our most recently reported member . . . Welcome Aboard, St. Nick.

Letters to the Editor

Sir:

The Safe Flight Instrument Corporation would like to compliment your staff on the very fine article titled "Give the Stick Shaker a Fair Shake" on page 14 of the September issue of your *Approach* Magazine. We note that your article indicated that September would be when the Precision Pre-Stall Warning System would be in use in the fleet. We, of course, had hoped the same thing but we have not been called upon as yet to manufacture this equipment. We do understand that we will be called upon shortly to start production on these systems and Douglas advises us that they think that they will be shipping retrofit kits to the fleet for the AD-7, 6, and 5s around February or March of next year.

We would like to comment on point number four at the end of your article in which it was stated "the sensing vane which extends from the bottom of the wing surface is an easily damaged unit." It is true that our simple commercial units on private planes is easily damaged. However, that is a Lift Detector in our terminology, whereas the Lift Transducer is a unit designed for rugged military operation and will stand a 70-pound load on a fore and aft axis and about a 50-pound load spanwise.

R. K. DUEE, JR., Sales Mgr.

Safe Flight Instrument Corp.

This is bad news in the face of the present AD stall/spin trend. We'll try to get the latest word on new schedule from BuAer. Meanwhile, suggest that

Letters may be forwarded either via official channels or direct on Anymouse forms. All letters should be signed, names are withheld on request. Address Approach Editor, U. S. Naval Aviation Safety Center, NAS Norfolk 11, Virginia.

AD drivers keep a sharp watch out on the IAS, and review subject to lead article in April Approach.—Ed.

Sir:

On our mail run to Rome a TF preparing to land found that the nosewheel could not be lowered. After trying everything they decided to fly back to Naples and make the landing here on our own field. I had the duty and was notified of their trouble.

I remembered reading of the identical situation reported in August *Approach* "Old Pro" club concerning the two commanders at Pax River and how they landed their TF sans nose-



wheel. I got a copy which was handy and proceeded to the tower and read the dope over the air to the pilots.

They handled the situation in this manner:

They had about 1400 pounds of mail and cargo aboard, plus plane captain and one passenger. It was the opinion of the pilots that if all the mail and cargo was shifted aft,



and the yoke was held full back on the landing, that the plane would probably stay up on the main gear and tail skag. They followed the procedure outlined in *Approach* except that the flaps were lowered. The engines were feathered and positioned by the starter. Personnel were stationed along the runway to run out and hold the tail down if necessary when the plane slowed down. The TF came to a complete stop about 2500 feet from the touchdown point with the nosewheel completely off the runway, i.e., the plane rested in a perfect three-point attitude—two main mounts and tail skag. It was a simple matter to lower the cocked nosewheel and lower it to the runway. No damage at all resulted.

We had the Grumman representative out here trying to find out if this was an isolated case or one that could happen more often. They drop checked the plane and in tinkering around came to the conclusion that the nosewheel somehow or other got cocked about 45° during retraction. As the nosewheel tire hit the wheelwell door it cocked it around to the 180 position. It went into the well, but as it was 180 degrees out of phase the door wouldn't close.

It's amazing how far-reaching aviation safety can be, for I don't think I ever crossed my mind that a writeup in "Old Pro Club" might save a pilot from having an accident.

LCDR R. A. ELDRIDGE
VR-24

CONGRATULATIONS to the new winners of the 1956 Chief of Naval Operations Aviation Safety Awards.

By their outstanding aviation safety performance during Fiscal 1956, these units have played a leading part in the success of the Naval Aviation Safety Program in saving lives and equipment as well as improving the Navy's combat air effectiveness.

Command presentation of the award with appropriate ceremonies will be accomplished as soon as plaques can be engraved and forwarded.

In the meantime, hearty congratulations to the winners, who will be appropriately fea-

tured in future issues of *Approach*.

The winners are:

AirLant

Fighter Squadron 41
Attack Squadron 25
Marine Helicopter Transport Squadron 262
Air Transport Squadron 1
USS INTREPID (CVA-11)
USS TARAWA (CVS-40)

AirPac

Fighter Squadron 193
Attack Squadron 216
Marine Helicopter Transport Squadron 162
Patrol Squadron 22

USS ORISKANY (CVA-34)
USS PRINCETON (CVS-37)

Training

Advanced Training Unit 614, NAS Hutchinson
Advanced Training Unit 213, NAS Corpus Christi
Advanced Training Unit 107, NAAS Cabaniss Field
Basic Training Unit—1 (North), NAAS Whiting Field

Reserve Training

Marine Fighter Squadron 215, NAS Olathe
Attack Squadron 722, NAS Los Alamitos
Patrol Squadron 801, MCAS Miami

Sir:

We have been receiving the *Approach* for about six months now and have found it an excellent aid in accident prevention. I request permission to reproduce articles from your magazine from time to time as an aid in our Base Accident Prevention Program. Incidentally, one of the first articles I would like to reproduce is "Time Zero" . . . Our pilots have commented very favorably on the Flight Surgeon's portion of your magazine. The articles on maintenance have also been very well received.

WILLIAM C. McCORD, JR.
Captain, USAF
Flying Safety Officer
Have at it, Captain.—Ed.

Sir:

Please send us copies of your crosswind-headwind component chart, offered on page 26 of the July *Approach*.

THE TWELVE DISCIPLES
ATU-213 NAAS Chase Field
Beeville, Texas

Thanks for your barrage of postcards, men. Due to the volume of requests for this chart, we're having it printed in kneepad size and will fill your orders as soon as possible.
—Ed.

Sir:

Here are photos of safety displays being used by the operations department of the Naval Air Reserve Facility, Spokane. The attention-through-motion type displays were made up by using motors from store and service station displays. These motors were obtained without cost after the displays were of no further value to the adver-



tisers. The rest of the materials were obtained for less than a dollar.

These eye-catching safety devices are a product of the imagination and mechanical ingenuity of Matt B. Burns, AC2, USNR-R.

H. F. WEBSTER
Commanding Officer



A Christmas Carol

With apologies to
Charles Dickens.

Stave One: Barley's Ghost

Barley was transferred, to begin with. There is no doubt whatever about that. The original of his orders was signed by the personnel officer, the executive officer, the squadron duty officer and the chief of the watch. Commander Scrounge signed it. And Scrounge's name was good upon the detachment endorsement for anything he chose to

put his hand to "by direction."

Old Barley, the squadron aviation safety officer, had "had it."

Commander Scrounge knew he was transferred? Of course he did. How could it be otherwise with an ASO who was forever nagging the skipper about a bigger and better safety program that Scrounge considered something of a nuisance.

Scrounge never painted out old Barley's name from the

Squadron Organization Chart, however. There it yet stood, months afterwards, above the readyroom door. "Squadron VA Umpty Umph—Commanding Officer: CDR Ebenezer Scrounge; Executive Officer: LCDR Robert Scratchit; Safety Officer: LCDR Jake Barley." Sometimes people new to the squadron called Barley the S.O.; sometimes Scrounge was called the S.O.—be that as it may, Scrounge answered to



"I am here tonight to warn you that you have yet a chance and hope of escaping the fate of such an assignment as mine, Ebenezer!" Barley said.

both names. As skipper it was all the same to him.

Oh, but he was a real pistol of a skipper, was Scrounge! A real driving, charging aviator tiger-type. Weather or not, briefing or not, had little influence on him. No wind that blew was bitterer than he, no falling snow was more intent upon its purpose, no pelting rain less open to entreaty. Foul weather and poor maintenance didn't know where to

have him. The heaviest rain and snow and hail and sleet, it was said by the LSOs, could boast of the advantage over him in only one respect—they often came down handsomely, and Scrounge never did.

Nobody ever stopped him in the passageway to say, with gladsome looks, "Hi, Commander, how's everything? Come over for a cup of coffee?" No lieutenants implored

Continued next page

Christmas Carol

Continued

him to bestow a trifle of a long weekend; no wingman asked him for the takeoff order; no pilot or navigator ever once in all his life inquired the route to such and such a place of Commander Scrounge.

But what did Scrounge care! It was the very thing he liked. To barrel his way along the crowded airways, on an operational clearance, with his tail-end-charlies of his formation hanging on for dear life—that was the Scrounge System — learn the hard way, as he had done!

Once upon a time, of all the good days during the squadron shore based training period, upon a Christmas eve, old Scrounge sat busy disapproving leave requests in his office. It was cold, bleak, biting, foggy; real ensign weather.

"Merry Christmas, skipper!" cried a cheerful voice. It was Scrounge's exec, Scratchit, who had finished cleaning out his basket.

"Bah!" said Commander Scrounge, "humbug! Out upon merry Christmas! What's Christmastime to you but a time for letting pilots go on leave; a time for scraping together a lousy part-time flight schedule. If I had my way, every idiot who goes about yakking 'Merry Christmas'

should be dipped in hydraulic fluid and put in hack!"

"But, skipper!"

"Mister, keep Christmas in your way, and let me keep it in mine—getting 'em into the blue. And another thing, knock off these proposals for expanding the safety program! —and get off my back about more ground school!"

"Sorry, skipper, I just thought we might get together for a ration of egg-nog over the weekend and talk over the squadron accident rate. It's pretty serious, you know and I was thinking that when you got around to naming a new Safety Officer we could drop that collateral duty as Welfare and Recreation Officer . . ."

"Safety Officer!" growled Scrounge, "as if that were the only thing in the world more ridiculous than a merry Christmas. Good afternoon!"

"Well, anyway, Merry Christmas, skipper!"

"Good afternoon."

"And a Happy New Year!"

"Good afternoon!"

Later, when at length the hour of securing arrived, Scrounge walked out to take his melancholy dinner in his usual melancholy BOQ. He lived in a gloomy room in the senior officers' wing (his wife and family preferred to re-

main out on the coast.) The room was sparsely furnished with a bed, overstuffed chairs, a desk, a lo-fi record player and various articles of flight gear and 19 plastic aircraft models.

Scrounge had closed and double-locked his door, and placing a worn record of "Heartbreak Hotel" on the phonograph, had stretched out on the bed when there sounded a clanking noise, deep down below, as if some public works plumber were dragging an anchor chain out of the locker. Then he heard the noise much louder, on the floor below, then coming up the stairs, then coming straight toward his door.

It came through the heavy door, and a vague figure passed into the room before his eyes.

"Barley!" murmured Scrounge, marveling but unafraid, "Jake Barley!"

The apparition spake not a word, but seated himself familiarly beside the record player and glared at Scrounge, who squirmed a bit before growling:

"Well, now that you're here, say something."

The figure frowned. "Why do you doubt what you see?"

"Because you are probably

only an undigested bit of spam, a blot of A-one sauce, a crumb of velveeta, a fragment of an underdone cheeseburger!" But even so, Scrounge was fearful, and he added hastily, "Why do you seek me out?"

"Because I am cursed by BuPers to roam the world, to pass the word to all concerning matters of aviation safety.

rition, wringing his hands, "aviation safety was my business. The problem of efficient squadron operations was my business—the dealings of my pilot ability were but a drop of water in the comprehensive ocean of safe flight operations! I am here tonight to warn you that you have yet a chance and hope of escaping the fate of such an assignment

orders such as mine. Expect the first at oh one hundred tonight."

Whereupon the figure of Barley drifted to the door and disappeared. Scrounge moved after him to try again the door, and he essayed a growl: "Humbug," but stopped on the first syllable. Pondering over these events he fell asleep without bothering to undress.

Stave Two: The First of the Three Spirits

When Scrounge awoke, it was quite dark, until suddenly a nearby ship's bell in the OOD shack tolled a melancholy two bells. Light instantly flashed up in the room and Scrounge beheld the strange figure of a small, bearded old man in aviation greens. A slight Mark VIII scar over one eye dated his flying to have been before the days of shoulder straps or crash helmets. In one hand he carried a battered pilot's log book.

"I am the Ghost of Accidents Past," the figure intoned.

"Long Past?" Scrounge managed.

"No. Your past. The things you will see are shadows of the things that have been. Rise and walk with me!"

They passed through the wall, and stood in the crowded hangar of a busy primary training field. The Ghost paused at a certain door and asked Scrounge if he knew it.

"Know it! I went through flight training here!"

They went in. At the sight of a grey-haired commander in summer khaki sitting at one



"Barley!" murmured Scrounge, marveling but unfraid, "Jake Barley!"

Thus am I forced to make amends for the misused opportunities of many squadron tours!"

"But you were always a pretty sharp aviator, Jake," faltered Scrounge, who now began to apply this situation to himself.

"Aviator!" cried the appa-

as mine, Ebenezer."

"Thanks, buddy, I . . ." began Scrounge.

"You will be haunted by Three Spirits," interrupted Barley.

"This is a favor?" asked Scrounge dubiously.

"Without these visits you cannot hope to shun a set of

Christmas Carol

Continued

end of a long green table, Scrounge cried in great excitement: "Why, it's old Flipwig, the Chief Flight Instructor! Bless his heart — b-but I thought old Flip got it at Midway?" But the Ghost merely pointed to the other end of the table where a thoroughly frightened avcad huddled in a chair.

"Wh-why, that's *me*!" Scrounge murmured in astonishment, "I remember the very day I was up for special commandant's time, after I got two straight downs for improper procedure . . ." His voice trailed away as he leaned forward to attend what the commander was saying to the avcad.

" . . . seem to be having more than your share of troubles, Scrounge. Looks like you've bent up two N3Ns already, not to mention some rather borderline grades in groundschool. What seems to be the trouble?"

The greying commander listened gravely to the end of the avcad's wretched story of sickness, family troubles and hardnosed instructors. Then, as the young Scrounge waited fearfully, the officer permitted

a slight smile to appear.

"Well, son, maybe you aren't the world's best pilot, but I guess we can give you a chance to get a little more dual



program was really rough when I went through — we didn't have any Santy Clauses then—ah, get me out of this place."

"I told you these were the shadows of the things that have been," said the Ghost, "that they are what they are, do not blame me!"

Stave Three: The Second of the Three Spirits

Then Scrounge was back in his own BOQ bedroom, awaking to squint at a great light in the next room. Stumbling to the door to chew out some

"I am the Ghost of Accidents Past," the figure intoned, "Long Past."

time and then try it again. You know, most of us have had a little trouble at one time or another . . ." The voice faded and the Ghost turned to Scrounge.

"Such a small matter," he said, "to find a workable solution to a problem, eh?" Scrounge could only stare foolishly.

"Well," he complained, "the

transient pilot's bull session, he saw a giant of a Phantom seated at a flight planning table. This Spirit was splendidly dressed in a spangled flight coverall and Mae West with sequins.

"Come in, Buster! Come in! Let's get the show on the road. I'm the Ghost of Accidents Present. Would you know me?"

"Uh, I don't think I have, fortunately," said Scrounge uncomfortably, "unless you want to count that barrier I got during the last refresher carquals—but that was hook bounce, and we were able to fix the damage in less than the 25 manhours required by 3750.6B, so it wasn't a real accident.

"Ah! But you and I know better, don't we, Ebenezer?" chuckled the Spirit, "We know you held off after the cut and floated into the fence, eh? But no matter, let us be off, and perhaps you may learn yet another lesson."

Then the room and all its contents vanished and they stood in the squadron ready-room where Scrounge beheld himself briefing a flight, and he squirmed to observe the speed with which he went over the points to be covered. Moving to the rear of the room, the Spirit permitted Scrounge to hear a whispered remark from one pilot—one Ensign Timm, Scrounge noted, called "Tiny," by his shipmates.

"Cheees!" murmured Tiny to a wingmate, "I still don't know how we rendezvous. And what about that wet runway on landing? Are we supposed to brake hard on the wet surface, or use aerodynamic braking . . . ?"

"Beats me," mourned the other, "I'm worried about where we're supposed to go if the field gets socked in while we're out."

"In that case," murmured Tiny Timm, "God help us every one."

Scrounge fidgeted wrathfully at the stupidity of this conversation. "Danged knuckleheads! I told 'em I'd pass the word about that when and if we got into some kind of a lashup . . ." Then he flinched on recalling something. The Spirit nodded at the thought which Scrounge was considering.

"That's right, Buster. You goofed because one of the flight had to land first with no

"Come in Buster. Let's get the show on the road. I'm the Ghost of Accidents Present."

droptanks transferring, and he braked himself into a big fat skid that put him off the runway with a busted wheel. Remember?"

Scrounge nodded miserably. "Uh, huh. I guess I was a little brief on the briefing. But it seems to me those young characters could have . . ."

"That's just why," interrupted the Spirit, "It's even more important for you experienced pilots to give these young gents all the good dope you can think of, and then some."

And suddenly the Spirit was gone, and as Scrounge looked about, he heard the ship's bell again, striking eight bells. Remembering the prediction of Jake Barley, he beheld a solemn Phantom, full pressure-suited and helmeted, coming toward him.

Stave Four: The Last of the Spirits

Scrounge trembled to see this Spirit, which with face



concealed by the plastic faceplate, spoke not but extended a gloved hand.

"I am in the presence of the Ghost of Accidents Yet to Come? Ghost of the Future! I fear you more than any spectre I have seen, but get on with it."

It gave him no reply. The hand was pointed straight before them. They seemed scarcely to enter the hangar area, for the walls rather seemed to spring up about them. But there they were in the heart of it, outside an

Christmas Carol

Continued

office door. The Spirit stopped beside one little group of pilots. Scrounge advanced to listen to their talk.

"No," a lieutenant was saying, "I don't know much about it either way; I only know he piled one up when he ran out of fuel on the final approach."

"When did he prang it?" inquired another.

"Last night, I believe."

"Why, what happened? I never thought he'd buy the farm."

"Beats me." said the first, with a yawn, "Personally, I think he made the same mistake he made on the flight that Tiny Timm went in on the flameout."

"You'd think," said the other, "that after the Board found that Tiny might have gotten back if he'd been sufficiently briefed, that he'd have changed his ways."

Scrounge was at first inclined to be surprised that the Spirit should attach importance to this conversation. Then he looked about for his own image, but another commander sat at his desk, and he saw no likeness of himself amongst the personnel moving about the squadron area.

Leaving this scene they went to another part of the air sta-

tion, to a small conference room. A rather senior-looking commander sat smoking a cigar at a table in the room. Scrounge and the Phantom came into the place just as several other officers, Bob Scratchit and another lieutenant,

"Scrounge trembled to see this Spirit, which with face concealed by the plastic faceplate, spoke not but extended a gloved hand."

ant commander and a flight surgeon entered. Seating themselves about the table, the little group began arranging various notes and documents.

The Commander indicated the thick folder which Scratchit had placed before him.

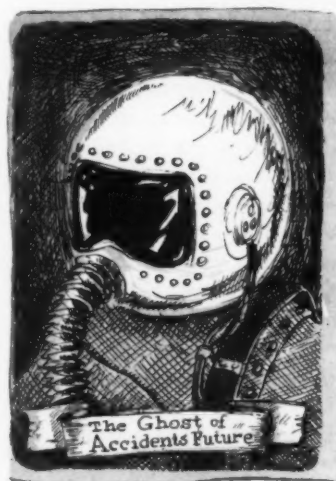
"Guess this about winds it up, doesn't it?"

"Looks like it, command-

er," said Scratchit, with a sigh, "all we need now are the signatures and an endorsement."

And as the Commander leafed through the folder, Scrounge was suddenly assailed by a terrible suspicion. He barely heard the words which the Commander was reading from the report: "... primary cause of this accident is pilot error in that the pilot failed to plan properly ..."

The Spirit stood behind the Commander seated at the table and pointed down to the report folder. Scrounge was beset with an uncontrollable



trembling.

"Spectre," said Scrounge, "tell me what pilot was that whose accident we heard discussed in the hangar?"

The Ghost of Accidents Yet to Come pointed to the AAR folder on the table.

"Now hold up here just a cotton-picking minute," quavered Scrounge, "let's get this deal squared away. Are those

the shadows of the Things That Will Be, or are they shadows of Things That May Be only?"

Still the Ghost pointed downward to the Report.

"But look here, sir!" choked Scrounge, "the way. I understand it is that certain things, if allowed to continue, must lead to certain conclusions. But if a gent gets the word, the conclusions will change. Isn't that the way with this setup?"

The Spirit was as immovable as ever.

Scrounge crept towards the Report, shuddering as he went; and following the finger, read upon the Aircraft Accident Report folder his own name: SCROUNGE, EBENEZER.

"No, Spirit! Oh no, no! Listen, buddy! I am not the pilot I was, I will not be the aviator I must have been but for this revelation. Assure me that I yet may change these shadows you have shown me by an altered life. Tell me how I may cancel this AAR!"

Holding up his hands in one last prayer to have his fate reversed, he saw an alteration in the Phantoms' helmet and dress. As though he had fallen victim to hypoxia, Scrounge saw the figure blur, shrink and collapse, and dwindle down to a bedpost.

Yes, and the bedpost was his own. The bed was his own, the room was his own. Best and happiest of all, the Time before him was his own, to make amends in!

Overjoyed, he ran to the

window, opened it and put out his head. No fog, no mist, no night — clear bright, stirring golden day.

"What's today?" cried Scrounge, calling down to a messenger who moved past.

"Today? Why, today is *Christmas day*."

"It's Christmas day! I haven't missed it. Wahoo! Hey, mate! Do you know the quarters of Lieutenant Commander Scratchit?"

"I sure do!"

"Then get over to his room on the double. Tell him his commanding officer says he's to report to squadron immediately!"

"Aye, aye, sir!" The man was off like a shot.

Scrounge, all a'chuckle, dressed quickly and went down to the squadron area. The duty section by this time was pouring forth, just as he had seen them with the Ghost of Christmas Present. Scrounge regarded every one with a delighted smile. He looked so irresistibly pleasant, in a word that three or four good humored fellows ventured a "Good morning, sir! A Merry Christmas to you!"

Scrounge had only seated himself at his desk when his exec arrived, displaying an understandable concern.

"Hallo!" growled Scrounge, in his accustomed voice, as near as he could feign it. "Try and get here on time once."

"Sorry, sir, my alarm clock didn't go off."

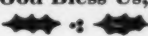
"Humph! Well, here's the thing. I'm not putting up with this sort of stuff any longer.

And therefore," Scrounge continued, leaping from his chair and giving Bob such a dig in the ribs that he staggered back, "and therefore I'm about to give you that safety officer you want, and to put your safety program into the squadron doctrine! I'd thought of young Timm—the one they call Tiny for the billet."

Bob gaped, and looked about uncertainly.

"A Merry Christmas, Bob!" said Scrounge, with an earnestness that could not be mistaken. "A Merry, and a Safe Christmas, boy, and we'll discuss this thing further tomorrow, after everyone gets the day off! I'll need the day off, too, you know," Scrounge grinned, "if I'm to be the first gent to begin your ground-school course! Now how's about that Christmas toddy you mentioned yesterday? We could work out some of the details, then, huh?"

"Duhh-h," said Scratchit.

Scrounge was better than his word. He did it all and considerably more as he changed his philosophy from "learn the hard way" to "teach by example." Quite naturally neither he nor Tiny Timm were subjects of AARs, and it was always said of Skipper Scrounge that he knew how to fly with the best, and how to celebrate Christmas with the best. And may that be truly said of us, and all of us naval aviators! And so, as the new ASO, Tiny Timm observed, God Bless Us, Every One! 



OOPS! — After touchdown on runway 16 an AD-5W pilot was told to continue straight ahead to the intersection of runway 16 and 23 for a right turn off.

Turning onto runway 23 the pilot stayed slightly right of the centerline. Taxi lights were in operation on this portion of the runway; however, an unmarked snowbank about 3 or 4 feet high extended 90 feet onto the runway. It ran to within 150 feet of the extreme end of the runway.

As the pilot approached the end of the runway he commenced a gradual right turn to leave the runway and intercept an outboard taxiway which led to the squadron area. At a distance of 180 feet from the end of the runway the right wheel struck the snowbank. The plane swung to the right with subsequent damage to the propeller and radome.

The accident report stated that the snowbank in question showed signs of previously having been lighted by flare pots but none were in use during the night of the accident.

Pilot error was considered a secondary cause but one endorsement noted that when aircraft not equipped with landing or taxi lights are operating, it is considered that any snow windrows or other obstructions should be adequately lighted.



ME, A WAVEOFF?—A JRB was landing on a 4200-foot runway, directly into a 5-knot wind. The approach was made over trees 74 feet high, one-half mile from the touchdown

The aircraft was not excessively high when crossing the end of the runway and the airspeed was probably 15-20 knots above stalling. Touchdown, however, was not accomplished until approximately halfway down the runway. There was sufficient dis-

A DIGEST OF SIGNIFICANT AIRCRAFT ACCIDENTS

Truth

end (approximately a 2-degree glide path) which are not considered as actual hazards by the airport authorities.

The pilot stated that he cleared all these obstructions by about 10 feet at a speed of 85-95 knots with power on and flaps extended 30 degrees. Power was removed after clearing the trees and the nose was lowered to lose altitude.

tance at touchdown (approximately 2000 feet) and the plane was in a position to effect a waveoff.

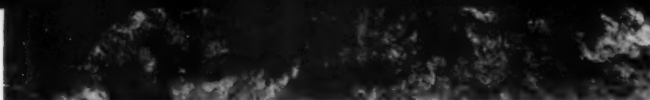
However, the pilot did not consider going around because he thought he could bring the plane to a stop. Actually, a mound of earth, 209 feet beyond the upwind end of the runway, stopped the plane with substantial damage.

The accident board, in as-

He who useth the wrong half of a
4200-foot runway asketh for it.



th and Consequences



signing pilot-judgment error, brought out the point that the pilot was probably not aware of the floating tendency that is produced by the extra lift present when the airfoil is in ground effect during the latter stages of a landing approach. Due to the reduction in induced drag, excess air-

speed does not pay out until valuable runway has passed by, unused. (See "Swing Low, Sweet Chariot!" May 1956 *Approach*, page 22.)

The accident board also recommended that all pilots be made acutely aware that a waveoff is one of the most effective instruments in pre-

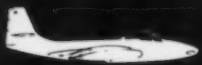
venting landing accidents. If a touchdown has not been accomplished in the first one-third of the runway, a go-around should be executed. (See "Whatever Happened to the Waveoff?" also, in the May *Approach*, inside front cover).

More briefs next page

Truth and Consequences

Continued

VF



TALLY LOW—During an air-to-air gunnery run the tow-target pilot felt a sharp shock through the airframe of his F2H. Thinking he had been hit he was about to jettison the tow and call for an immediate return to base when the firing pilot reported that the tow bar had possibly been struck by several rounds. Assuming the shock to have resulted from this the tow pilot continued the flight.

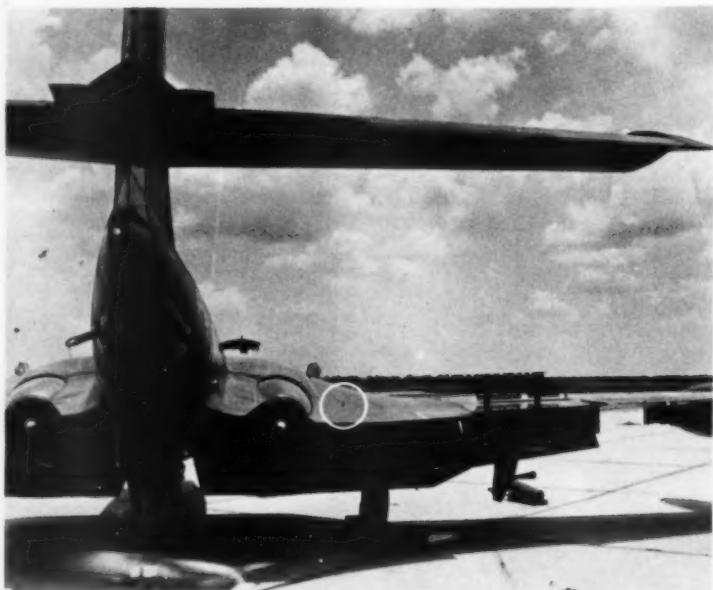
After landing, the plane captain of the tow plane informed the pilot that the starboard stub wing had been hit. One round had entered it at a flat angle. Damage was limited to secondary structural members and the wing skin.

Though the firing pilot had a record of low angle-off runs, and on the run in question, was observed to be very flat, at a high angle of bank and well aft, evidence indicated that the round which struck the tow aircraft was in fact a ricochet off the tow bar.

The projectile was found laying on the lower skin of the stub wing. The nature of the entry point and extent of internal damage indicated a reduced velocity. The tow bar was holed and paint the same color as used by the firing pi-

lot was found on it. No paint from the projectile was found on the skin or internal structure and projectile itself was

It was the conclusion of the board that cause of the accident was the firing pilot's violation of two well-promul-



Bullet hole in tow plane (circle) resulted from improper firing angle.

free of paint. Firing runs were all starboard side but the bullet entered the wing slightly port to starboard.

Firing periods were definitely at a low angle-off as evidenced by the length of holes in the banner, the observation by the tow pilot and from the camera film.

gated gunnery safety rules: *Never fire at a 'square' banner or less, and never fire up at the banner.* While these rules, in addition to others, are primarily designed to prevent banner collisions, violation of both simultaneously poses a great threat to the safety of the tow plane.



WHICH WAS IT?—Midway in their flight two *Banshee* pilots found the weather at destination had gone down to 600-foot overcast, with 3 miles visibility in light rain. The forecast had been for a 10,000-foot overcast with 6 miles visibility.

Preflight planning had been adequate and the wingman with 500 total hours had just completed a four-week intensive allweather intercept course. By all odds it should have been a near-routine flight. However, the wingman reported he had lost his main inverter and was operating on the alternate AC generator system. Also, he had occasional communication difficulty.

On top at 41,000 feet the leader was able to get on the GCI scope by squawking emergency IFF. Shortly thereafter the leader lost communications with the wingman. GCI was vectoring the leader toward the station but the wingman's actions were indecisive and erratic, and the leader disregarded the vectors, trying to keep the wingman in sight and regain contact with him.

"I stayed with him as long as my fuel would allow," the flight leader reported, "then asked GCI for a penetration." Twenty-eight minutes had elapsed from the initial arrival over the station until the leader began his penetration. Inbound out of his penetration turn he heard his wing-

man call for penetration instructions. That was about 39 minutes after initial arrival over the station. The leader completed his penetration and landed.

Approximately 17 minutes more elapsed before the wingman commenced a penetration and the GCA duty officer reported the pilot sounded confused and did not start his letdown right away even though GCI gave him the necessary instructions. Sometime during the penetration the wingman reported his G-2 compass and bird dog out and was given a no-gyro approach.

When the wingman first appeared on GCA radar he was 5000 feet, 9 miles from the field. No frequency change was necessary as the GCA controller had switched to GCI channel to monitor the letdown.

A no-gyro approach was set up to the nearest GCA runway and the pilot was in good position. However, he failed to start the turn to final immediately and he disappeared in ground return, south of the field. He reappeared going away from the station 50 degrees left of the instructed heading.

From this position he was lined up with another runway. At 700 feet altitude he was told he was one and a half miles from the end of the runway and told to descend to 300 feet (surveillance minimums). At one mile from the end of the runway the pilot informed GCA he was pulling up with the intention of ejecting. GCA again called giving the pilot his position as one mile from the runway.

The aircraft crashed two

miles northwest of the field in a near vertical attitude and it was theorized that fuel exhaustion was experienced before the pilot reached safe ejection altitude.

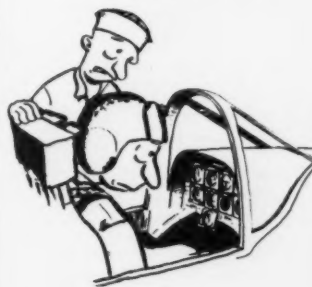
The accident board concluded that the primary cause of pilot error resulted from confusion and indecision brought about by poor communications, a low fuel state, the possibility of his flight instruments cutting in and out, and possible hypoxia.

It was noted that the aircraft generator will cut out when *both* throttles are retarded below approximately 68 percent. At IDLE throttle setting this could occur at below 24,000 feet. With a main inverter failure under IFR it is essential that 68 percent throttle be maintained.

If the generator cuts out, power is removed from the G-2 compass. In this condition if any turns are made, upon reapplication of necessary power to cut in the generator, the drive motor in the G-2 system will immediately

More Briefs next page

The Light Approach



"I don't know what it is either, so I guess you won't need it!"

Truth and Consequences

Continued

start to drive the compass back to the correct heading. This would tend to make him lose confidence in the instrument.

In an endorsement by the squadron C. O. it was emphasized that any erratic or unexplained action at altitude might be a symptom of anoxia and an accompanying pilot should call for an oxygen check and 100 percent oxygen.

VT



WHAM BAM! "@#!—IN CLEAR AIR**—The 0800 pilot balloon sounding for Atsugi, Japan in January gave a wind flow at 6000 feet of 300 degrees, 4 knots. At 7000 feet, wind was 300 degrees, 49 knots and the velocity remained at 50 knots up to 10,000 feet.

Considering the wind direction and sudden increase of velocity just east of 4000- to 10,000-foot mountains, the forecaster stated that "turbulence and possibly severe turbulence would be present." However, the stability index above the 5000-foot level did not show conditions of severe turbulence and the atmospheric conditions were not specifically brought to the attention of operating squad-

rons.

During mid-morning a TV-2 was making a letdown from 25,000 feet in the clean condition. TAS was approximately

lots were leaving the aircraft the plane captain drew their attention to structural damage of the right wing. In addition to popped rivets and split skin along the main spar cap, the wing was found to be twisted and forced upward in excess of one inch.

Though the pilot was not tagged with pilot error, the circumstances provide a good opener for some thoughts on clear air turbulence.



In addition to leading edge damage, clear air turbulence popped rivets along the main spar of the wing.

370 knots, and while passing through 7000 feet, the aircraft entered clear air turbulence. Three violent, successive jolts were experienced, two of which the dual pilot reported, "caused my head to make contact with the canopy."

There was insufficient time to make any corrections other than to reduce power as the turbulence was almost immediately passed. A normal landing was made, and as the pi-

In the first place, the pilot of the TV should have been alerted by the results of the pilot balloon sounding.

British analysis of clear air turbulence indicates that it is associated with a marked increase or decrease in the vertical wind velocity. In this case, it would be called "wind shear." A 45-knot increase in wind velocity within a thousand feet of altitude should be sufficient evidence to warn

any pilot of possible turbulence.

Another possibility in this case is the presence of a mountain wave in the area. Several distinctive cloud types, such as the cap cloud, rotor or roll cloud, and lenticular clouds usually accompanying the mountain wave. However, if the air is very dry, no clouds will form, eliminating any visible warning to pilots.

Clear air turbulence can often be found near the tropopause, the layer or air at altitudes varying from 5 to 11 miles above the earth at which the lower atmosphere becomes the stratosphere. Also, the jet stream is many times accompanied by isolated patches of turbulent air. The 1947 British study showed that this type turbulence is variable in altitude, depth, length and width. A real sky tramp in its wanderings.

The average sample is 50 to 100 miles long and several thousand feet thick.

There is a type of invisible turbulence linked with the dry or dew point front which often bisects the warm sectors of lows in the south-central part of the U.S.—it is distinct frontal discontinuity, without clouds or precipitation, and with dissimilar winds causing wind shear and turbulence.

An occluded front is another turbulence factory. In the areas of the occluded front, 25 to 50 miles to the north of the peak of the warm sector, there are three different air masses in direct proximity. The wind shear associated with the different wind streams can be rough. The rule is to fly at least 50 to 100 miles north of the peak of the occlusion.



INCOMPLETE LOW APPROACH

—During a search mission a HUP pilot attempted a landing on a mountain valley road 3500 feet high. He was inexperienced in helicopter flying in mountains and his circular



On the downwind leg of his landing approach the pilot was low and slow. A gust of wind from behind dropped the HUP even though full power was applied.

approach was made at about 20 to 30 feet altitude above rough ground with an air-speed of 30 knots. The wind was indicating calm.

During the approach a tailwind gust was encountered which dropped the HUP enough to let the tailwheel hit the edge of a gully. Full power arrested the descent but the engine oversped and there was insufficient lift to sustain flight. The HUP settled to the ground with zero forward

speed and toppled over. The rotor blades broke up and fire and explosion destroyed the airframe. Fortunately, all three occupants received only minor injuries.

Previous to the attempted landing, all the pilot's landings had been on sea level fields. The accident board consulted with experienced helicopter pilots and determined that there was no necessity for holding the approach altitude and airspeed to such low figures.

On the day following the accident the board examined the crash scene and noted that although a calm wind condition existed, small breezes of from 5 to 7 knots would spring out for short periods of time from different directions.

One of the board's recommendations was to give inexperienced pilots, wherever possible, sufficient familiarization flights to indoctrinate them in special procedures, techniques and special problems of mountain and high altitude flying.

For more on helicopter mountain operations, see Army Aviation Digest, December 1955, recently forwarded to all helicopter units. Additional information can be found in CAA booklet, *Terrain Flying*, available for 30c from Supt. of Documents, Washington 25, D. C., and CAB booklet, *Mountain Winds and Their Effects on Flight*, (Safety Bulletin 186-51), available free from the CAB Bureau of Safety Investigation, Washington 25, D. C. It is also suggested that new egg-beater pilots review "Down Collective," September *Approach*.

HOT STUFF

"One day I was scheduled to ride copilot in an S2F for a student who was on his last rocket and bomb hop. As I started going over the checkoff list with him he said, 'Never mind, I don't go over that any more.' Since I was still in the instrument stage I didn't feel like I could say anything about it.

"As we took off I noticed the Aux pumps were off and the mixtures were normal. Luckily, nothing happened. After climbing out he told me to take it while he set up the rocket sight. As I took over I finally turned off the rudder trimmer and suggested the cowl flaps and oil cooler flaps be closed."

"Oh," he said, "I forgot them!"

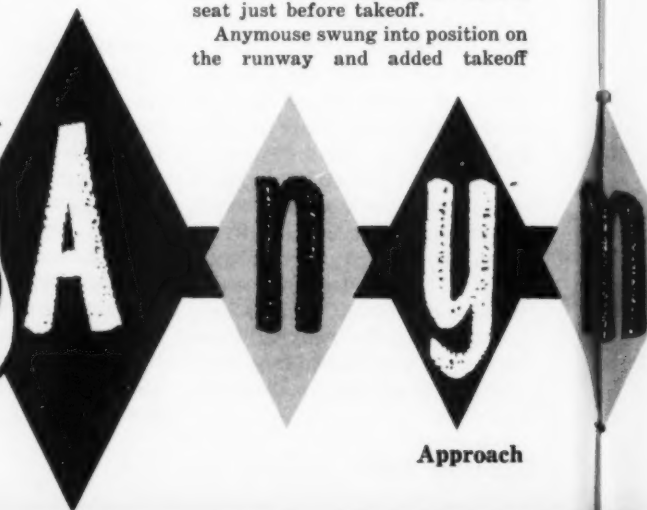
"This student knew I had only a few hops in the S2F so he was going to show me how hot he was. Hope I never get *that* hot."

FUEL FLUKE

After completing a flight in a *Super Connie* Anymouse landed to discharge passengers and refuel. A decision was made to RON and take off the next morning.

For the takeoff a flight engineer under instruction was at the engineer's panel with the regular flight engineer standing beside him. Run-up was normal and Anymouse first decided to let his copilot make the takeoff from the left seat. Because of a strong crosswind he changed his mind and switched to the left seat just before takeoff.

Anymouse swung into position on the runway and added takeoff



power. "Shortly after breaking ground," said Anymouse, "the engineer reported number 3 engine out.

"After leveling off at 1500 feet the flight engineer came up to the cockpit and said that number 3 could now be started. I asked him what had happened and he said that we had taken off on an empty tank!

"I then checked and saw that we had actually taken off on two empty tanks.

"While the engineer was going through the feathering procedure he had placed all tanks in the emergency position and thus prevented the loss of number 2 engine also.

"Here's what happened. Prior to landing on the previous day a student engineer on the panel ran the number 2 and 3 tanks dry in the air—that is he switched when he noticed a drop in fuel pressure. The landing was made on tanks 1, 2A, 3A and 4. Refueling required only about 500 gallons and the engineer, for some unknown reason (he said it was to save time), ordered it put in tanks 1 and 4.

"Now, on going through the checkoff list before takeoff, tanks 1, 2, 3 and 4 were selected as these are the ones recommended for takeoff. Since we had refueled there was no reason to assume that any main tank would be empty. From the copilot's seat where I was sitting during the runup it is difficult to see either the fuel gauges or tank selectors and I didn't check to be sure.

"As soon as the order was given to feather the tank selectors went to the EMERG positions (1, 2A, 3A

and 4) and thus prevented number 2 engine from quitting.

"Both flight engineers had attended the company school and the instructor had over 1000 hours on the panel. I have over 8000 hours with 2000 hours in R7Vs.

"If this can happen to me—and I'm not bragging, not at this point—it can happen to you. *Don't Relax!*"

SMIFFU

"I had one of six *Cougars* scheduled for a cross-country flight, we planned to remain at our destination overnight and return the next day.

"The plane I drew was just back from overhaul. It had been flown only one time on a test hop before it was scheduled for the navigation and instrument training flight.

"In overhaul, it had been given a flying tail. Since this was the first time I had ever flown a plane with this equipment, I spent more than usual amount of time checking this gear and probably less on other items.

"By the time I got around to the 80 percent runup and the sniff test for fumes in the cockpit, other planes in the flight were already taxiing out from the line. Rather than hold up for the trip, I made a rapid turnup to 80 percent, switching cabin pressurization on. I noticed I was on NORMAL oxygen so assuming that position would give me a check of cockpit air, I didn't bother to take off the mask which was already in position.

"Taxi out and takeoff was routine.

"Shortly after takeoff, I noticed what I believed to be fumes in the cockpit. Since the plane was just out of overhaul, I assumed the smell was part of the aircraft's newness and paid little attention to the odor.

"However, to eliminate any personal inconvenience, I switched over to 100 percent oxygen. A couple of times I changed back to normal but since I continued to get a faint smell of fumes, I went each time back to 100 percent oxygen.

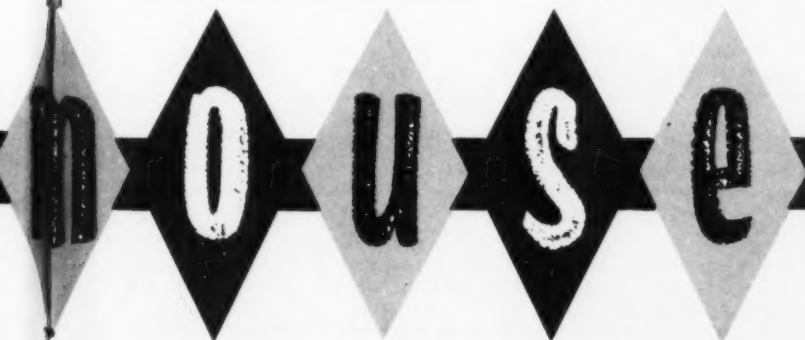
"We reached 30,000 feet shortly after passing over Checkpoint One, and changed course for Checkpoint Two.

"About half way between them at an altitude of 35,000 feet, I suddenly got what appeared to be a blast of smoke in the cockpit. Even though I was on 100 percent oxygen, there was still an intense smell of gasoline fumes.

"I immediately radioed the flight leader, told him I had smoke in the cockpit and was turning back. While in the 180 degree turn, I switched from 100 percent to emergency oxygen. I also changed from normal cabin pressure to ram air to clear out the cockpit.

"At the time the smoke appeared, I had what I believed to be a loss of power and I throttled back in the turn to 80 percent. Also in the turn, I dropped down to 20,000 feet thinking that if something was seriously wrong, I would be at a better altitude to get out of the aircraft.

"As I headed back to Homebase,



ANYMOUSE

Continued

the situation seemed to clear up and aside from a completely frost covered cockpit as a result of the ram air, I believed the trouble to be over. I remember thinking that it was probably some minor mishap and I should have continued on the flight to our destination.

"When I was squared away on the course back to Homebase, I switched from ram air to normal cabin pressure both in an attempt to clear away the frost on windshield and canopy and also to see if there would be more fumes.

"Smoke again appeared with fuel fumes, not as bad as before but strong enough to notice.

"With the natural reluctance of a weekend aviator to get stranded at a base away from his home, I elected to pass over Checkpoint One and go on to Homebase for a landing there.

"In an attempt to test the fumes again, I switched from emergency pressure to 100 percent oxygen. Even at 100 percent, the fumes were so strong that I gagged on the mixture and had to change back to emergency pressure in order to breathe.

"Fumes in the cockpit continued to be so strong that my eyes smarted and burned.

"I left the throttle setting at approximately 80 percent and noticed no further loss of power.

"As an emergency procedure, I attempted to contact radar control but could never raise them although there are stations in the area.

"In this condition, I passed over the air field at Homebase at approximately 10,000 feet and made what was close to a simulated flameout approach to the runway. I told the tower operator why I was returning to the field but stated no serious emergency was involved.

"After shutting down the engine, I made a short check of the plane but could find nothing wrong.

"It was only after the line crew

made a careful examination that the trouble was determined.

"The line chief told me, 'Sit down, you had better be seated when you hear what almost happened.'

"A pressure cap on the high pressure fuel manifold was not tightened and had worked loose. Vibration from the engine presumably was loosening it further to the point where it was about to fail off.

"Fuel in the lines under 400 pounds pressure was being sprayed out through the loosened threads and this fuel was flowing back over the engine.



"The compressor intake for the F9F-7 is just below the point where the jet fuel was spraying out. So the air conditioning unit was drawing a full load of the vaporized fuel into the cockpit.

"The fuel was being blown out in such quantities that it had washed the engine completely clean at the points of contact.

"If the cap had fallen completely off, the fuel under pressure would have flooded the plenum chamber.

"As it was explained to me, 'one spark would have been one too many.'

"Looking back on the incident, I realize that there were changes in procedure which I could have made to either have avoided it completely or else to have minimized the danger.

"First, it is possible that I hurried so fast through the preflight cockpit sniff test that I did not get a thorough check for fumes. I did not require that a line crewman get on the airplane after the engine was started to check inside the plenum chamber through the air in-

take doors for possible leaks.

"Next, once I was in the air and smelled fumes so strong that I had to switch on 100 percent oxygen for comfort, I should have realized that fuel fumes could have only come from a broken or damaged gas line that could only be trouble.

"The final mistake was that once the serious trouble developed I elected to fly back to Homebase rather than land in the nearest field."

HELP WANTED

"Our VS squadron has had several wheels-up passes in the last month. In all three cases the pilots had left the training command about a year and were in the 600- to 700-hour category.

"One pass was carried to a touchdown, the Fosdick being scraped before a waveoff was initiated. This one involved a simulated single-engine approach during which the pilot elected to lower his gear at a later time than normal. During the approach one or both pilot's attention was diverted by an approaching aircraft.

"The other two instances were in the FCLP pattern during the day. The control tower waved off one aircraft and the other was waved off by the LSO.

"Station policy is to leave the gear down during FCLP touch-and-go landings. However, the squadron policy is to raise them during waveoffs. These incidents must have resulted in the normal pattern procedure being broken by a waveoff. In my opinion, it might be better if gear were raised and lowered on each pass to accustom pilots to lowering them each time.

"The number of wheels-up landings and passes in the S2F indicates a need for a better warning system, either visual or audio. Setting up an instruction or saying that proper training will eliminate the situation just won't accomplish it."

You're so right!—Headmouse



HEADMOUSE

Dear Headmouse:

NAVAVSAFETYCEN message 111644Z of February 1956 recommended prohibiting T-28 IFR GCA approaches due to faulty location of UHF antenna. Such restriction appears absurd to experienced T-28 drivers who have made numerous GCA runs at 105 knots with no such radio difficulties. However, since the possibility does exist and since recommendations from the Safety Center are accepted as law by some headquarters, the following temporary preventive measures are recommended:

"Pilots will request GCA to simultaneously transmit on UHF and VHF 134.1 and will ascertain that 134.1 reception is adequate on the ARN-14 receiver prior to commencing an actual GCA approach."

Anymouse

BuAer concurs until antenna problem resolved and further says IFR approaches are OK as long as pilots understand your last paragraph.

Re: Fuel Contamination, and Electronic Triggering of Aircraft Landing Gear

BuAer says that adapting jet fuel tanks or conventional fuel tanks with square filler necks and using square hose nozzles to insure proper aircraft fueling, has been previously brought to the attention of this Bureau. As previously determined, the large markings on the side of refueler trucks adequately indicate the type and grade of fuel contained therein. In addition, it is considered that proper indoctrination of personnel and satisfactory performance of their duties would further preclude the pos-

sibility of fueling an airplane with the wrong fuel. In view of the above, any modifications to fuel filler necks or fuel nozzles are considered unnecessary.

The use of an electronic beam to successfully trigger aircraft landing gear in the event the gear is not already in the "DOWN" position is considered impractical in that beam divergence would require precision landing approaches to allow full extension of the gear prior to touchdown.

BuAer also indicates that such interest in aviation safety is appreciated and invites future submissions of recommendations relating to the improvement of aeronautical equipment and facilities to reduce costly aircraft accidents.

Very resp'y,
Headmouse.

Dear Headmouse:

On many aircraft, particularly the AD series, a safety plunger is provided to prevent inadvertent retraction of the landing gear while the weight of the airplane is on the landing gear. Since most unintentional retractions occur just after touchdown I suggest disconnecting the electrical wiring to the landing gear solenoid so the safety plunger is extended at all times. On touchdown, if the airplane skips, particularly in a crosswind, the first thing the pilot thinks of is to retract the landing flaps. Because the weight of the airplane is not on the landing gear and the landing gear safety plunger is not extended, if the pilot selects the wrong control, the landing gear can be retracted while on the runway. Although prohibited by directive, this remains the cause of an all too frequent type accident.

It takes no appreciable added effort for the pilot to intentionally depress the safety plunger for normal retraction of the gear after takeoff. This added effort is just enough to prevent

a possible retraction of landing gear during rollout.

Anymouse

Inadvertent retractions have been limited in number. Consensus is that change might involve trouble in depressing the safety plunger for normal retraction, say at night off the cat with a dead fan.

To: Anymouse

Re: Plexiglass for 52F hatches.

BuAer has authorized Grumman Aircraft Bulletin 174 providing plexiglass hatches to aid pilot vision. A retrofit program will be established and incorporation will be made in production models.

Very resp'y,
Headmouse.

Dear Headmouse:

On a recent preflight inspection of an SNB, I noticed that the hinge pin connecting the elevator horn to the control was secured by an elastic stop nut. I questioned the line maintenance people but they were unable to give me a positive answer.

Correct me if I'm wrong, but didn't an order come out about a year ago stating "replace all elastic stop nuts with castellated nuts secured with cotter key at this point?"

ANYMOUSE

The handbook of illustrated parts, AN 01-90CE-4, Fig. 96, page 338, illustrates the use of a cotter pin in this assembly (part no. 186160-2). However, Aircraft Structural Hardware Manual, AN 01-1A-8, authorizes the use of elastic stop nuts in aircraft control system joints where anti-friction bearings are used, if inner races of the bearing are clamped to the supporting structures by the nut and bolt to prevent rotation of the race. See "Rite Bite," May 1956 APPROACH.

Runway Watch—The Mobile Control Unit possibly averted two wheels-up landings in one week by prompt radio contact with approaching aircraft. It is felt the unit has more than compensated itself in the first month of operation.—*ComFAirJapan*

Flying Missiles — Pilots and crewmembers should insure that all loose gear is secured throughout the aircraft. Turbulence may be encountered unexpectedly and any loose item can easily become a deadly missile.—*VR-24 Safety Council*

Safety Council Notes

Cannibalizing—From the report of a flameout accident investigation: The cause of the flameout on this particular engine could not be determined without the missing parts. The components removed from this engine may have been placed on another engine and may be the cause of another flameout accident. Refrain from stripping or removing any component from an engine involved in an incident or accident until the cause has been determined and the part wanted has been exonerated.—*1st MAW*

R-1340 ENGINE CYLINDERS—BuAer rejected a recommendation for new cylinder procurement for the R-1340 engines in the SNJ aircraft due to the phasing out of the SNJ and the expense involved in procuring new cylinders. BuAer recommended use of sodium hydroxide etching to detect cracks visually in the cylinders as early as possible. Council urged visual inspection of cylinders by maintenance and pilot personnel. *CNABaTra*

Guiding Hand for Non-Rated Men—It was pointed out that many of the non-rated men arriving in units have little understanding of the dangers inherent in operating around aircraft. Indoctrination in the elements of safe operation must start with the commanding officer's interview of each man and progress continually under the guidance of the petty officers and officers with whom he works.—*FLogWingPac*

Crash Protection for VP Crews at Battle Stations—As the result of an accident when a patrol plane flew into the water on a night searchlight run, it was recommended that the crew be provided with some crash protection when at battle stations, and that crew members not needed at battle stations take ditching stations when operating at low altitudes over water.—*ComAirPac*.

Compass Errors—Crosscheck all compasses (magnetic and electric) each and every hour, and oftener if on instruments. Don't forget that the magnetic compass is the instrument least likely to give false readings. Electric compensating devices do malfunction.—*FLog-WingPac*

Excerpts from some of the Navy's 88 Safety Councils throughout the world, who provide local leadership and emphasis to the naval aviation safety program.


Runway Control Officer—The need for much closer supervision of pilots to prevent wheels-up landings and serious landing and takeoff accidents was pointed out by the aviation safety officer. It was reported that action was being taken by training and aviation safety departments to require a runway control officer with adequate communications equipment, to observe all Organized Reserve VF Jet, VF and VA takeoffs

—*CNAResTra*

It's in the Book—No matter how long a man has been working on a specific model aircraft, he should never rely on his memory. It is not as important to remember every detail, dimension, tolerance,—as it is to know where to find and how to use this information. The importance of using all published material must be stressed. Being thoroughly familiar with and using the applicable publications lessens the possibility of error and greatly increases the man's ability to work on aircraft.—*3rd MAW*

Two Percent GET the Word!—A safety questionnaire utilized by one unit was discussed. The results of the questionnaire were shocking! Only one student correctly answered one-half of the questions. Three possible reasons given for this are: (1) not getting the word in ground school, (2) instructors not plugging the safety program, or (3) students being led around too much without proper emphasis being placed on individual initiative.

—*CNATra AvSafCouncil*



He's a quiet, friendly looking lieutenant commander type, with enough crowsfeet about the eyes to indicate he's been around a bit. A mild-voiced, sandy-haired gent—over a cup of coffee you might figure he's a pretty average sort of aviator, maybe? Let's say his name is Smith, and let's go along with him on a few "average" sort of P-boat flights, the details of which can't be compressed into a . . .



Log Entry

December 1956

Log Entry

Continued

THE flight log yeoman glanced again at the clock across the office, shrugged disappointedly and turned back to the stack of yesterday's flight record forms which still remained to be entered in the individual pilot's logs.

"Part Dogs! Part Dogs!" he muttered, "Nothing but a lot of figures and letters that are supposed to describe a lot of airplanes by a lot of pilots—most of 'em a lot alike, too, I'll bet!"

He looked at the yellow-sheet section on top of the pile to note the pilot's name: "Smith, A. M." Reaching up to the shelf above his desk the yeoman pulled down a flight logbook having the name "SMITH, A. M., LCDR," inked upon it. Opening the pages to where a paperclip marked the current month, he began transcribing the numbers-letters hieroglyphics which described the nature of the flight:

Log Entry
Date: 20 October 1955
Kind of Flight: Code 349
Pilot Name: G. J.

The yeoman frowned at that last entry. "Now what in the world was he doing, grinding around in the dark all that time?"

... Actually, Smith was thinking, the night really

didn't seem so dark until you got down to three or four hundred feet where the P5M growled busily along in the middle of an anti-sub search problem. Down here there was no horizon, no lights, no nothing, except the red glow of the instrument panel. If you looked almost straight up you could see the stars, but they were no help to a pilot tooling a *Marlin* along at about the height of a tall periscope.

Then Smith was easing the P-boat into a 90-270 procedure turn to reverse course, just as he had done a number of times before during the problem—and things began to happen!

First, the marker beacon light began to glow with increasing brightness until not

all electrically-operated instruments failed.

Even as this sequence of events began, Smith had turned over the controls to the copilot and was directing the crew, via messenger runner, to man ditching stations. Meantime, the P5M had slid into a nasty, steepening turn—which the pilot discovered when he saw the glint of a previously dropped smoke-light pattern appear in the upper corner of his side window. Using the smokelights as a reference, he leveled the *Marlin*, but the plane was past the lights in seconds and the pilots were again without instruments or any visual reference. Only a flashlight-illuminated needle and ball on the right side of the instrument

panel remained for attitude control.

It was then that Smith remembered having seen the "handle" of the Big Dipper almost parallel to the horizon the night before. Locating the constellation, he managed to control the attitude of the plane with this "horizon." Then, with only engine power and air-speed needles to augment this "gage,"

he began a climb to bailout altitude because the sum events of the past few minutes appeared to be ample evidence of a fire in the airplane.

What with the shifting of the crew as they went from ditching stations to bailout stations, and the movements of the messenger-runner communications system, the climb was a tedious stairstep affair



even the dimmer cap reduced the glare. Smith stared in disbelief. Marker beacon? Two hundred and seventy miles at sea? The pilot was permitted no further thought on the subject, for his flight control boost abruptly went out. Then, the interphone went dead, and, as a brilliant flash occurred through the entire airplane, all lights went out and

As the climb progressed, electronics troubleshooters found one battery which had survived the current failure, and the radioman began broadcasting a "Mayday."

In addition, practice depth charges had been dropped in a prearranged manner to alert the target submarine regarding the airplane's emergency. The sub promptly surfaced and began to re-broadcast distress information on another frequency.

The climb was leveled at 8000 feet, as the engines were heating excessively without cowl flap control, and the *Marlin* eased into a cruise to await the arrival of a Coast Guard aircraft which had been directed to the scene.

Making contact with the Coast Guard plane, Smith then made an easy-does-it joinup and course was set for home station. Nearing base, and while making a circling descent, the P5M became separated from the lead plane, and again the *Marlin* pilots were disoriented. At this moment, and literally out of the black, there appeared an Air Force interceptor which had inobtrusively joined the little group. The F-94 pilot, shrewdly interpreting the uncertainty of the P5M's gyrations, thoughtfully turned on his landing light to provide a reference point for Smith and Company, and the *Marlin* was able to continue its descent into the VFR area of the seadrome pattern. Landing—uneventful.

(Cause of the trouble later was determined to be a failure of the voltage regulator system which permitted a massive current overload to all circuits—to the extent that even the lightbulbs themselves had burst. It was thought that possibly a prevalent habit of the crew to stow water breakers in the electronics compartment had allowed leaking water to drip onto electrical contacts and cause a short.)

Log Entry
Date: 11 April 1956
29 Hours

... This one, Pilot Smith (the same) would agree, was a bit more complicated. Returning to base at night after a 10-hour anti-sub exercise



flight, Smith arrived over the seadrome to find the sea state so rough that the crash boat was unable to set out the landing marker lights. Employing a respectable amount of pilot skill, however, Smith overcame the no-lights, rough-sea handicap to accomplish another one of those "uneventful" landings. Then, in company with a second *Marlin*

which had followed him down, Smith positioned his airplane in such a way that the landing lights provided illumination for three other P5Ms to land safely. Neat trick. No sweat. Routine—except. . .

There followed a 19-hour period in which the P5Ms could only attempt to hold position in the rough water until the sea calmed enough to permit a ramp approach. Then there occurred another unexpected difficulty. . .

Early during the "holding period," Smith's P5M hit something which knocked a hole in the P-boat's hull. Water poured in through the hole in such quantities that the bilge pump was unable to take care of the inflow. The plane began slowly but surely to

sink. Faced with the prospect of beaching the *Marlin*—with considerable resultant damage to be expected—Pilot Smith dispatched the crash boat to the beach to obtain another bilge pump. Returning with the pump, and unable to approach the P5M in rough water, the crash boat crew attached two Mae West preservers to the bilge pump and

dropped it ahead of the *Marlin*. Wind and waves drifted the pump, with its retriever lines, down to the waiting crewmen of the P-boat who hauled it aboard.

With the additional pump in action, the water level was lowered sufficiently to effect temporary repairs, after which the vigil continued several more hours of "holding"

Log Entry

Continued

economically on one engine. Thereafter, an "uneventful" ramp approach was completed.

Log Entry
Date: 25 April 1956

To Pilot Smith (the same), this flight was simple, short and loaded with possibilities: Shortly after takeoff on an operational readiness inspection flight, a large quantity of smoke and fumes boiled up throughout the P5M to indicate a strong likelihood of a major fire. On instruments and in a controlled climbout, Smith ordered the crew to fire stations, to don parachutes, and requested clearance for an immediate emergency descent. Cleared as requested, the *Marlin* broke out at some 600 feet to make another of those "uneventful" landings at the seadrome.

Log Entry
Date: 30 April 1956

This flight, too, the pilot might have commented ruefully, was difficult, in a rugged sort of way. Pilot Smith (the same) returned from a morning instrument-check hop to enter the traffic pattern. As the P5M descended under the

control of the pilot under instruction, checkpilot Smith observed that the nose was lifting into a gentle climb. As the airspeed began to drop off, Smith cautioned the other pilot, who requested assistance in complying. Smith took over, to find the controls—aileron, elevator and rudder—were frozen. Not even the combined efforts of both pilots could budge the yoke.

Immediately Smith hit the trim tabs—no effect. He then cut power to bring the nose down. As the plane's nose dropped, airspeed picked up to 170-180 knots and the rate descent increased to 1500 feet per minute—considerable when it is noted that the affair began at about 500 feet. At this point, it appeared to Smith that the flight would very likely end in a semi-controlled crash, and the pilot's primary concern was to arrange to be going as slow as possible when the airplane hit the water. (Somewhere about this time he had found time to transmit a "Mayday" and, you guessed it, order the crew to ditching stations.)

Then began a weird deceleration sequence in which Smith (a) applied a surge of power to prevent the nose from dropping, and (b) whacked off the power immediately in order to secure the braking effect of the props; then added power again. This sequence was repeated as long as time and altitude permitted—about three cycles, until the *Marlin* was landed, downwind, at about 130 knots, with props being reversed at touchdown. No damage; no injury.

(The cause appears to have been a faulty control system

relief valve which became clogged to permit 3000 pounds pressure into the system and effectively lock the controls. The pilot considered, and discarded the idea of disengaging the power boost system when he remembered that full tab was set against the uncontrollability, and to shift into manual control would have been disastrous in his opinion.)

Log Entry
Date: 31 July 1956

This one? A mere nothing—just a slight touch of vertigo one night after cloverleafing about at low altitudes for several hours on an anti-sub hop. Even the doc said it was nothing at all—a little rest and a couple of link hops should clear up the staleness in jig time.

The log yeoman carefully totaled up the last entry in the logbook and squinted again at the clock. Almost time to secure. He yawned and stretched his cramped shoulders, and looked again at the logbook.

"Man, that's the life, alright," he murmured as he replaced the logbook upon the shelf, "cruise around the sky in a nice comfortable flying boat—no paperwork, no field days, no worries..."

And for no apparent reason, the logbook marked Smith, A. M., fell off the shelf....



Approach

CAB

HAVE YOU JUST "MISSED" being involved in an air collision? Has another aircraft loomed up suddenly in front of you too close for comfort? Have you taken evasive action to maintain safe separation distance? If this, or a similar experience of another aircraft coming "too close for comfort," happens to you—then, PLEASE REPORT IT to the Civil Aeronautics Board.

Your cooperation is urgently requested. In the interest of reducing the potential of air collision, it is necessary that valid statistical data be obtained on the 'circumstances surrounding such occurrences. Your name or aircraft registration number is not needed. No attempt will be made to identify pilots or aircraft. These reports will be held in Strict Confidence by the CAB. They cannot be used for any action against either a pilot or an operator.

Please complete this questionnaire by checking off the pertinent items. Add additional comments and suggestions if you desire—then seal and drop the report in a convenient mail box. No stamp is required.

—CAB Form 352

"NEAR-COLLISION" REPORT—Please check pertinent items and return to CAB

1. Incident occurred: <input type="checkbox"/> Arriving or departing an airport having a control tower <input type="checkbox"/> Arriving or departing an airport with a control tower <input type="checkbox"/> En route LOCATION: _____ (If you wish give exact location otherwise indicate the date in which incident occurred)		2. Time: <input type="checkbox"/> Dawn <input type="checkbox"/> Daylight <input type="checkbox"/> Twilight <input type="checkbox"/> Night—dark <input type="checkbox"/> Night—moonlight	3. Operating in accordance with: <input type="checkbox"/> An IFR clearance <input type="checkbox"/> An IFR clearance with a VFR restriction <input type="checkbox"/> VFR—in contact with control tower <input type="checkbox"/> VFR <input type="checkbox"/> IFR—no air traffic control clearance
4. Navigating by means of: <input type="checkbox"/> VOR <input type="checkbox"/> ADF <input type="checkbox"/> GCA <input type="checkbox"/> FMSR <input type="checkbox"/> Rotor navigation <input type="checkbox"/> Pinger <input type="checkbox"/> Other: _____		5. Atmospheric conditions: Clouds: _____ Visibility: _____ <input type="checkbox"/> Clear <input type="checkbox"/> Overcast <input type="checkbox"/> Fog <input type="checkbox"/> Rain <input type="checkbox"/> Thunderstorms <input type="checkbox"/> Other: _____	
6. Class and type of your operation: <input type="checkbox"/> Civil <input type="checkbox"/> Military What was your aircraft doing? <input type="checkbox"/> Transport <input type="checkbox"/> Training or check flight <input type="checkbox"/> Scheduled or charter <input type="checkbox"/> Other or transport <input type="checkbox"/> Other: _____		7. Type of other aircraft: <input type="checkbox"/> Civil <input type="checkbox"/> Military What was other aircraft doing? <input type="checkbox"/> Transport <input type="checkbox"/> Training or check flight <input type="checkbox"/> Scheduled or charter <input type="checkbox"/> Other or transport <input type="checkbox"/> Other: _____	
8. Approx. speeds at time of incident: Your aircraft: _____ Other aircraft: _____ Up to 100 m.p.h. _____ 100-150 _____ 150-200 _____ 200-300 _____ 300-500 _____ 500 and over _____ Unable to estimate _____		9. Your position relative to clouds: <input type="checkbox"/> Below clouds <input type="checkbox"/> In clouds <input type="checkbox"/> Above clouds <input type="checkbox"/> In and out of clouds <input type="checkbox"/> Between layers <input type="checkbox"/> HD clouds Distance to clouds: _____ (Vertical) _____	
10. Operation Phase: Action: _____ Takeoff _____ Climb _____ Level flight _____ Holding _____ Descending _____ Landing _____ In turn _____ Arrivals _____ Don't know _____		11. Aircraft approached each other (Prior to any evasive action) on course that was generally: <input type="checkbox"/> Head on <input type="checkbox"/> Crossing <input type="checkbox"/> Chasing and _____ <input type="checkbox"/> The evasive action aircraft _____ <input type="checkbox"/> Other aircraft evasive action _____	
12. How far away was other aircraft when you first realized a "Near Collision" was imminent: <input type="checkbox"/> Less than 100 feet <input type="checkbox"/> 100-500 feet <input type="checkbox"/> 500-1000 feet <input type="checkbox"/> 1000-2000 feet <input type="checkbox"/> 2000 feet or more <input type="checkbox"/> 2-3 miles <input type="checkbox"/> 3-5 miles Did you see the other aircraft before this? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes—How far away at this time? _____		13. Your altitude in feet: MSL _____ Above ground _____	
14. How far away was other aircraft when you first realized a "Near Collision" was imminent: <input type="checkbox"/> Less than 100 feet <input type="checkbox"/> 100-500 feet <input type="checkbox"/> 500-1000 feet <input type="checkbox"/> 1000-2000 feet <input type="checkbox"/> 2000 feet or more <input type="checkbox"/> 2-3 miles <input type="checkbox"/> 3-5 miles Did you see the other aircraft before this? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes—How far away at this time? _____		15. Evasive action: Action: _____ Pull up _____ Descend _____ Turn _____ None _____ Impossible _____ Unknown _____	
16. How close did the other aircraft come to you? Horizontal _____ Vertical _____ Remarks: _____		17. Remarks: (For use on only one side of report) _____ _____ _____	
18. Aircraft lights turned on: Action: _____ Rotating searchlight _____ Not passing (or near) _____ Flashing red lights _____ Steady red lights _____ Landing lights _____ No lights _____ Other: _____		19. Aircraft lights turned on: Action: _____ Rotating searchlight _____ Not passing (or near) _____ Flashing red lights _____ Steady red lights _____ Landing lights _____ No lights _____ Other: _____	

CIVIL AERONAUTICS BOARD
WASHINGTON 25, D. C.
OPTIONAL RETURN

CIVIL AERONAUTICS BOARD
8-90
WASHINGTON 25, D. C.

New CAB "Near Collision" Report Program, endorsed by Navy in OpNav Inst. 3750.10, will provide factual data needed to develop facilities and programs for midair prevention. Copies of the report form are prominently displayed at NAS and AF operations offices in Z.I. (ConUS) and adjacent oceanic areas.

NOTE—This report does not replace any report which may be required by your own command. If such a report is required of you, or if you wish to report the incident for purposes of official action, then you should take whatever additional action is appropriate.



BUBBLE TROUBLE

... You can get it in joints when you
get too high without pre-conditioning ...

2 HE pilot of an FJ-4 took off and climbed to 40,000 feet within a very few minutes. His oxygen regulator was set at NORMAL.

During the latter portion of his climb, he experienced difficulty in maintaining cockpit pressurization, and soon developed a slightly uncomfortable sensation as well as mild double vision.

He assumed his difficulty to be lack of oxygen and switched to 100 PERCENT. His sensations improved slightly, but he soon developed a pain in the left elbow which rapidly increased in severity with involvement of the right elbow and both knees. His condition rapidly deteriorated and he elected to return to base. He later stated:

"My initial descent was slow because I did not want to get into a steep dive and possibly pass out and be unable to recover . . . The pain intensified and I knew I must get down faster. I had put my arms and hands in my lap as it was more comfortable and when I went to drop the dive-brakes and pull off more power, it was difficult to get my hand on the throttle. I used my right hand to assist my left arm in getting to the throttle. I remember thinking that, if I thought I was going to pass out, I would jump, and then wasn't sure I could get my hands on the face curtain."

He experienced confusion and a possible momentary loss of consciousness during his rapid letdown. At about 10,000 feet the joint pain subsided and his senses cleared. He landed approximately one hour later without undue difficulty. Upon leaving the aircraft, he "felt rotten" and de-

cided to report to the station hospital.

Upon arrival at the hospital, he was in mild shock and somewhat confused. His blood pressure was low and his pulse was rapid. His pupils were dilated but reacted sluggishly to light and accommodation. His lips, nail beds and skin were blue. He was given oxygen, and medication for pain and shock. The following morning he showed no physical signs of his experience, and his only complaint was of feeling somewhat tired out and a vague generalized soreness.

This episode appears to be a clear-cut case of aero-embolism with moderate circulatory collapse and central nervous system involvement.


Aero-embolism occurs at high altitudes because the lowered air pressure permits the formation of bubbles of nitrogen and other gases which were at ground pressure when they entered the tissues, blood and other fluids in the body. This gas expansion and bubble formation is often illustrated by comparison with the bubbling of a carbonated drink when removal of a cap lowers the pressure within the bottle.

Joint pain is not always the most prominent and disabling symptom of aero-embolism. If you're say, at 34,000 feet, and begin to feel that you are looking through a tunnel—it's rather disconcerting. Here's what happened to the pilot of an AJ.

He took off and climbed to 35,000 feet in less than 30 minutes, then dropped to 34,000. He wore his oxygen mask from takeoff, and the cabin was pressurized to

21,000. After an hour-and-a-half at 34,000 his shoulders started to ache, and he also noted a feeling of fullness, as of gas in the abdomen. Twice he switched to 100 percent oxygen, felt better, and returned to normal oxygen. The third time the ache came back, it was accompanied by tunnel vision—loss of peripheral vision. Alarmed, he began to descend, and landed normally.

At the flight surgeon's office blood was drawn for carbon monoxide determination, but this was negative. The only remaining symptom was a mild headache, but the pilot said it took over an hour for his vision to return to normal. The flight surgeon concluded that this was a case of aero-embolism due to nitrogen, and that the visual disturbance was due to circulating nitrogen bubbles interfering with the normal blood supply to his eyes. Visual disturbances may make control of the aircraft impossible, and the physical pain occurring from aero-embolism can be severe enough to be disabling.

Two crewmembers in the cockpit with the pilot had experienced no difficulty. But it must be remembered that tolerances differ between individuals, and in the same individual from time to time. Modern jet aircraft with extremely high rates of climb make it necessary to use 100 percent oxygen from entering the aircraft to completion of the flight to avoid aero-embolism in the event of cockpit pressurization malfunction. Continuing refresher training in all phases of aviation medicine is necessary if we are to prevent accidents caused by bad habits. 



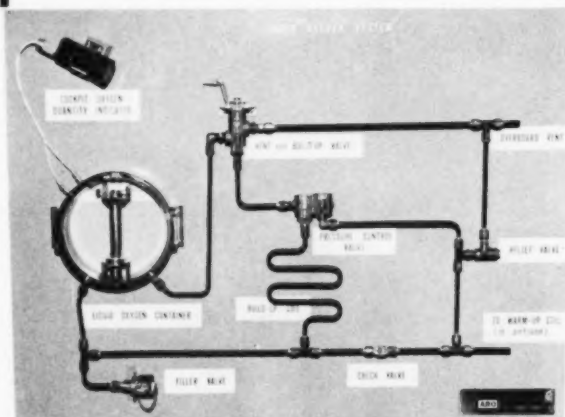
Five-liter LOX container of the type installed in FJ-3, -4 aircraft.

A WORD ON LOX

LOX, short for liquid oxygen, is the hottest cold item in aviation today.

It can be dangerous if handled by inexperienced personnel but can be safe as water if handled properly. BuAer directs that *only* qualified personnel, or authorized personnel being trained and under the supervision of qualified personnel, will operate liquid oxygen equipment. But here are a few interesting facts and useful tips on the subject, which may interest you.

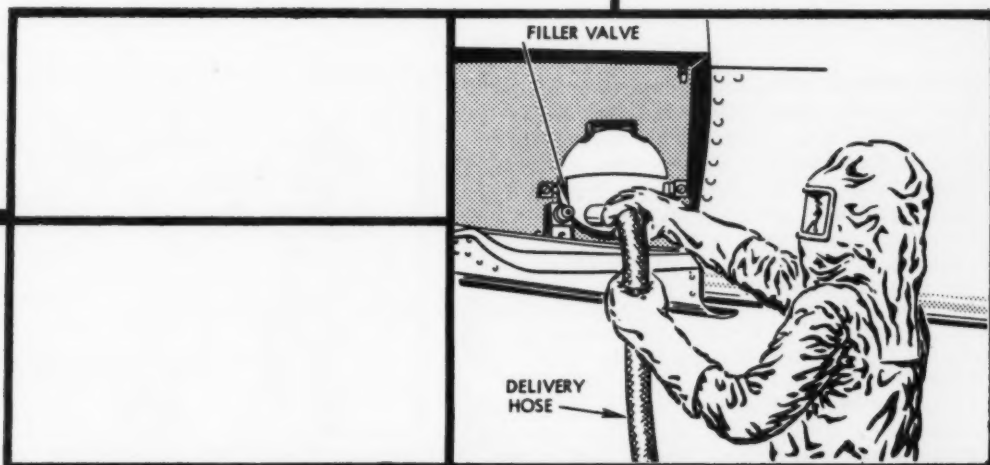
Some of our more recent models of aircraft, including the FJ-4, A3D, A4D, F8U and the F11F, are equipped with LOX systems. This system gives the same performance as comparable high- or low-pressure systems. Yet, it takes up only one-eighth the space and weighs less than a third of a gaseous system.



Cutaway schematic of the Aero LOX system.

LOX is a light blue liquid which flows like water and is extremely cold. It boils into gaseous oxygen at *minus* 297° F. and expands to a ratio of 862 to 1. It weighs 9.54 pounds per gallon. It is made by the fractional distillation of purified liquid air.

The LOX system in the FJ-4, for example, is a low-pressure system which provides gaseous oxygen to the diluter-demand regulator at a pressure of 70 psi and delivery rates up to



Protective clothing must be worn by those who handle LOX.

20 liters per minute as demanded by the pilot. The FJ-4's supply of LOX is stored in a 5-liter (about 5.3 U.S. qts.) vacuum insulated container. A liquid oxygen conversion system maintains the delivery pressure and volume. The amount of LOX to be evaporated is controlled by means of a pressure operated control valve. After evaporation, the oxygen passes through a heat exchanger (warm-up coil) to raise its temperature, and then is delivered to the diluter-demand regulator for the pilot's consumption. A system relief valve vents excessive pressures overboard that may occur due to the boil-off of LOX. An electrical capacitance type indicator provides the pilot with an accurate means of determining the amount of LOX remaining at any time.

Inasmuch as a LOX system gives the pilot a greatly increased breathing oxygen supply, it is unlikely that he will deplete it before his

aircraft runs out of fuel.

Violent combustion and extreme cold are the principal dangers in handling LOX.

Many materials, such as grease, oil, tar, paint, plastics, graphite, cloth and wood can burn violently or explode when mixed with LOX.

One of the hottest, fastest and most violent reactions is that which occurs when LOX is mixed with alcohol. (This stuff is the fuel used by the engine of the Bell X-2 which made a 1900 mph flight last August.) Unless authorized, *do not* use alcohol in any relation with LOX.

For an example of its volatility, a ball of steel wool which is saturated with LOX and ignited, will disappear instantly in a flash comparable to that of a giant flash bulb.

Liquid oxygen, by itself, will not burn, but

Continued next page

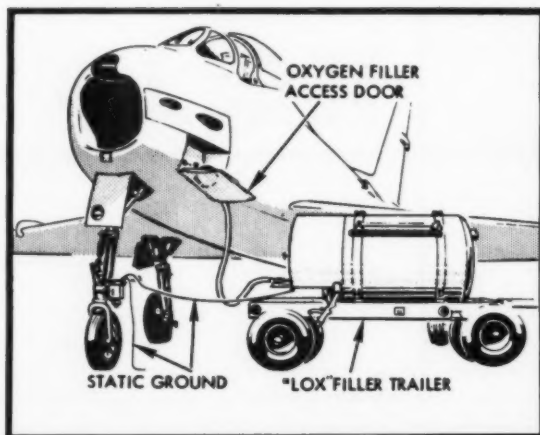
A WORD ON LOX

Continued

when mixed with the smallest amount of nearly any foreign material, a fire is possible.

Once a LOX fire is started, it is virtually impossible to put it out. There have been cases North American Aviation reported in its *News* of 27 January, of LOX running down into pavement cracks and mixing with tar and oil. Because of expansion in restricted space, it has exploded, blowing out chunks of paving. Remember that LOX draining overboard must be caught in a clean drain can; never mop up spilled LOX—just let it evaporate into a ventilated area.

The extreme cold of LOX will instantly produce burns if held in contact with the skin. Protective clothing and equipment consisting of a suitable face mask, shield, apron and



A static ground is connected from LOX trailer to aircraft and aircraft to deck.

WHEELS - UP SAVES....

LT A. R. KREUTZ

LT W. E. JENNINGS

CHANDLER, M. M., AN

NAS BIRMINGHAM, 21 and 22 July 1956

One AD each day on consecutive days was saved from making a wheels-up landing by Lt. Jennings and Lt. Kreutz, Runway Control Officers, and Chandler, the Runway Wheel Watch.

The pilot of the first incident was forced to make two initial passes before being cleared to break. On base, he reported gear "down and locked," but only the flaps were extended. His waveoff was given by use of radio and paddles.

The next day, another pilot was making touch-and-go landings and extended the gear on the downwind leg. At the 180-degree position, he reported gear down, and then pulled up the gear handle. His waveoff was given by use of 2 flares from a Very's pistol, paddles and radio. Pilot-reported flares were the most effective means of warning, with radio next most effective.

gloves, must be worn by those handling LOX. Avoid touching bare metal lines containing LOX, as bare skin will freeze instantly.

Never seal LOX in an unvented container. LOX sealed off at room temperature can develop a pressure of more than 12,000 psi! Never store or handle LOX in a poorly ventilated area or close to inflammable materials.

Whenever LOX is being transferred from storage containers, filler trailers, aircraft or other portable units, keep *FLAMES, HEATERS, EXHAUSTS, SPARKS, BURNERS, APUs* and *smokers* away.

Make sure that your airplane is grounded before it is serviced. See that the static ground is connected from the trailer to the airplane and airplane to deck.

Keep a CO₂ fire extinguisher handy to dissipate and dilute liberated gases of LOX.

In summary, always maintain a healthy respect for LOX and keep work areas, equipment, tools and your clothes free of oil, grease and combustible material. Put nothing into liquid oxygen and put liquid oxygen into nothing but the proper container. And remember that whenever LOX is spilled, the best thing you can do is to let it dissipate or dilute it as rapidly as possible.

Note: Parachute riggers and others concerned with liquid oxygen equipment should read and know the contents of BuAer Aviation Clothing and Survival Bulletin 5-56, which deals with safety precautions for the storage and transfer of LOX.



CDR. G. R. FOERESTER

LCDR D. R. HESTER

NAS NEW ORLEANS, 23 July 1956

Using flares to give a waveoff to the pilot of an AD-4NA, Cdr. Foerester and Lcdr. Hester prevented a wheels-up landing at New Orleans Municipal Airport.

Approach is recognizing those persons who in the proper performance of their duties, prevent wheels-up landings. Commands with knowledge of "saves" by their personnel are requested to submit a speedletter report of the incident. See page 40 October 1956 Approach for details.

December 1956



SEAT BEFORE CHUTE

"I ejected from my F9F because the cockpit was filled with smoke which I assumed was preceding an explosion. I had to activate the pre-ejection lever twice — hadn't moved it far enough the first time. I couldn't actually see the handle either time for the smoke.

"After a brief interval I released the face curtain and pulled the rip cord and waited for the parachute to open. I was free-falling, spinning and tumbling violently, and I realized that the parachute had not opened.

"I forced my chin toward my chest to check the D-ring, again. The oxygen mask blocked my view, so I threw it away.

"Instantly I saw my left shoulder strap, and I realized that I was still strapped to the seat! The chute was opened and I was sitting on it!

"I pulled the seat-belt fastener and rolled away from the seat. Suddenly there was a jolt and I was suspended in the air."

Though this pilot's chute was severely damaged, enough was left to land him safely. He had fallen from 18,000 feet to 9000 or 8000 feet while strapped to the seat!

Another pilot, in an F7U was less fortunate. The pilot had apparently experienced vertigo, and ejected at about 5000 feet. While the ejection seat fired normally, the parachute failure that caused his death was considered due to failure of the seat and pilot to separate properly. Presumably, the pilot opened his chute while still in the seat. He was not incapacitated by the ejection because he was conscious to pull the D-ring. Mild harness bruises on the thighs indicated that the chute did open.

Another pilot, who ejected successfully from an F9F reported that his first reaction was to pull the ripcord. "But then I remembered that I had failed to pull the toggle on the oxygen and unfasten my belt." I released the seat, pulled the chute, and made a successful landing."

Unless you are equipped with automatic seat belt release and parachute opener, remember: *leave the seat before you open the chute.*

NOTES

from
your

FLIGHT SURGEON

ELUSIVE D-RING

Imagine hurtling earthward in free fall grasping for the D-ring, which doesn't seem to be there! It has happened to some individuals who were fortunate enough to retrieve the ring in time.

This situation is strictly the result of improper harness adjustment and not the fault of the equipment.

The D-ring will slip around to the back under your arm, out of easy reach, unless the slack is removed from the main lift webs. Proper adjustment is quick and easy.

First, hold the shoulder adapter (that metal gizmo which rides on your collar-bone) with one hand and pull the main sling web through with the other hand.

This puts the extra webbing at the back of the shoulder. To remove this, reach down to where the main lift web enters the chute pack and pull the extra length down through the back pack. The main sling will remain tight, and the D-ring will stay within easy reaching distance.

During the cockpit preflight, practice reaching for and grasping the D-ring, but look at it as you touch it.

SQUADRON IDEA

Two accidents involving "squadron idea" modification and substitutions of shoulder harness or inertia reel components resulted in one fatal, and one partial paralysis case.

New ideas and concepts are always welcome, and a theory, design or idea submitted on NavExos Form 2374 and NavExos 2375 (Invention Form) gives it to the right people. Or a letter to the Chief, Bureau of Aeronautics via appropriate channels will receive proper consideration. Putting your theory in an airplane and letting your buddies "prove" it is a poor way to try to assist with research and development.

TAKE IT ALONG

An AD pilot reports that his cockpit filled with hydraulic vapor during flight. Fortunately he made a safe landing. Hydraulic vapor can be toxic—the effects depending on the specific fluid being used and the concentration in the cockpit. Common reactions are skin and eye irritation and severe coughing.

In such cases, it is of vital importance to have breathing protection available, in the form of oxygen equipment ready to put on, for every flight, even though the flight plan does not call for oxygen alti-

OLD AND YOUNG CLASSIFICATIONS

There are now three service groups of pilots. The designator IA has been discontinued. As long as a pilot can pass the physical requirements for Service Group I, he remains Group I until age 50. He then becomes Group III.

Group II is comprised of pilots age 35 to 50, and those pilots under age 35 who have accumulated 10 or more years of active flying service since designation, who meet the physical standard for Group II, and pilots of Group I who temporarily meet only the standards of Group II.

Group III is comprised of pilots over 50 years of age, and those under 50 who are recovering from illness or injury, or who temporarily do not meet the standards for Groups I or II.

CAT EYE

Airmen flying through the night will be able to see with daylight clarity thanks to an optical amplifier the Wright Air Development Center is perfecting. Nicknamed "Cat Eye," the electronic system presents an image on the screen of a cathode ray tube. The optical amplifier is 1000 times more sensitive than a standard television camera. "Cat Eye" amplifies the always present light—too dim to be perceived by the human eye—by increasing the contrast between light and dark.—*Mats Flyer*

MEDICAL OFFICER REPORT

Medical officers are reminded that it is the original copy of the MOR which is to be sent to the Naval Aviation Safety Center. Carbon copies are being received in some cases, and are sometimes almost illegible. OpNav Inst. 3750.6B, Part VI, paragraph C.2.c.(1) says The original of a medical officer's report will be mailed direct via air mail (regular mail within 250 miles of Norfolk, Va.) to the NASC. . .

It is due within four working days after the accident; however, in those cases where a full report cannot be completed in this brief period, the basic report must be submitted and then followed as soon as possible by supplementary information.

To facilitate location of the basic report, the supplementary information should be identified by squadron MOR number, plane, bureau number, date of accident, and name of pilot, as explained in paragraph C.2.f.

CLEARING THE AIR

There is a misconception among some aviation personnel that there is a relationship between hyperventilation and grunt breathing, that the latter can cause the former, or that they are the same. T'aint so!

Grunt breathing is an emergency maneuver to compensate for low air pressure when you lose your pressurized oxygen supply. It is a deliberate attempt to breathe out, while closing the exit deep in the throat. This increases pressure within the lungs and forces a greater amount of oxygen which is in the lungs to go into the blood stream.

On the other hand, hyperventila-

tion, or over-breathing is a condition where the normal amount of carbon dioxide in the system is reduced by exhaling (and inhaling) at an unnecessarily rapid rate. It is unintentional and can be produced by anxiety, by the effort to breathe in from a faulty mask or breathe out against oxygen under pressure.

What are some of the hyperventilation symptoms? For an example, suppose you were extremely anxious about something right now, and started to breathe deeply and rapidly. This page would start to blur and it would become increasingly difficult to clear it by blinking. This might well add to your anxiety and you would continue to overbreathe.

Your heart might pound, you would feel a dizziness or lightheadedness and perhaps a sensation of loss of balance. You would feel a warm glow. Your fingers and eventually your toes would tingle, and if you continued they might quiver, cramp and claw. (Chemically speaking, if you continued your experiment until you lost consciousness, your normal breathing control center would take over, and you would soon recover.) Deliberate hyperventilation is of course not recommended. If you were standing, you could fall and be injured. And if you were flying and hyperventilated deliberately—well . . . !

Take note of the hyperventilation symptoms now, so you can recognize them while flying, in time to take corrective action. Correction is a simple matter of holding your breath a few seconds and then breathing slowly.

People differ as to the order in which they develop the subjective symptoms, but the tingling extremities is the best method of distinguishing it from another problem, hypoxia.

Hypoxia is still considered the primary problem, while hyperventilation is in an unestablished position as a safety factor. Additional information will be made available directly to your flight surgeon.

ON
HANDLING

High pressure air

"Old timers" will perhaps recall "Five Seconds to Live," published in Aviation Safety Bulletin 21-54. The story dealt with circumstances involving a fatally injured airman who had used high pressure air to inflate a Cougar's nosewheel tire. The tire exploded blowing the wheel to bits and fragments struck the airman in the head. The following account is the latest of a series of mishaps involving inflation of tires with high pressure air as reported in ComAirPac's Safety Bulletin of 17 September 1956.

TWO men were directly involved in the episode, one of them receiving extremely crippling injuries when the wheel rim exploded under the stress of excessive tire pressure. Several bystanders received minor shrapnel wounds while nearby aircraft were pierced by flying fragments.

In the F7U squadron where this accident occurred, the day had been one of intense activity carried on to late in the afternoon. Check crews were still working when the sun set and evening twilight took its place.

Our two principals in this tragedy were busy changing a tire and were wrapping up the job, one working on cotter-keying the wheel nut and the other inflating the tire. An air bowser with 3000 psi and 300 psi connections was wheeled over to the airplane. In the past, the low pressure side had been frequently defective and it had become the practice to use the high side, bleeding off air

by cracking the valve and then checking the gage frequently to see that excessive pressures were not obtained.

Unbeknownst to the men, this bowser happened to be in excellent working order and the low pressure side could have been used except that a few minutes work would have been necessary to disconnect the single hose from the high side and put it on the low pressure side.

'Bleeding off air from the 3000 psi source, the tire was inflated and checks made using a *high pressure gage*! This gage has a scale of the same size as a low-pressure gage except that close inspection is required to see the marking and estimate the readings. Shortly after inflation was commenced, the wheel rim exploded violently and flew to pieces. *The tire itself did not explode.* The man kneeling before the wheel and working on the retaining nut took the full force of the explosion. A

large fragment of metal amputated his left arm and others crushed and fractured his leg in several places.

Shrapnel flying past him at rifle velocities scratched the skin of several men working nearby and clipped an ear lobe off another man. Other pieces drilled through a nearby aircraft puncturing the aluminum as if it were tissue paper!

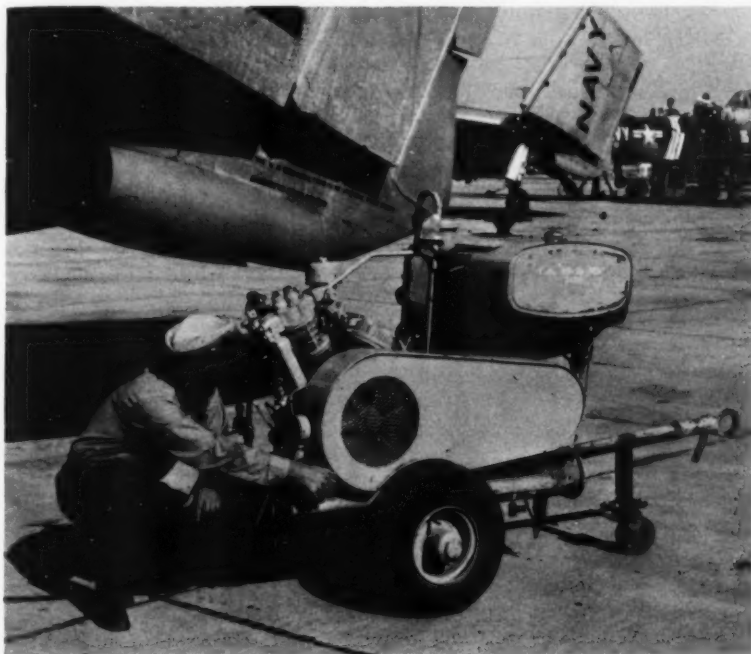
Investigation to determine all of the causes

larger space. The effects are alike.

Pointed up by this accident is the fact that Technical Order 52-50 was not complied with. The use of extremely high pressure air is *prohibited* for tire inflation purposes. Now everybody can see why.

Some other items came out in the investigation also. Compare these with your practices and see if they apply:—

No source of light other than deceptive



It takes only a few minutes to disconnect the single hose from the high side and put it on the low pressure side.

in this accident is continuing and it is possible that a defective wheel was at the root and not excessive inflation. Regardless of the outcome, however, the fact still remains that modern high-pressure tires inflated with several hundred pounds of air are potentially several sticks of dynamite waiting to go off in the face of an unsuspecting person.

The enormous energy in highly-compressed air is exactly the same as an explosive which gets its destructive effect by the generation of a large volume of gas in a short space of time. In an explosive, it's in chemical form; in a tire, it's merely confined to a somewhat

evening twilight.

Man directly in front of wheel while tire being inflated.

Bowsers frequently defective on the low pressure side and consequently tempt men to use the high pressure side.

Only one hose on the bowser and that on the high side.

High pressure gage being used (difficult to read accurately).

Tire gage lying on the deck and obviously not handled with the care a delicate instrument deserves.



From the



INFORMATION WANTED—The question has been raised concerning the value of utilizing the field arresting gear to minimize the damage to the aircraft nose in cases where the nose gear will not come down on tricycle type landing gear. Unfortunately, information of this nature has not been required in reports to the NASC until just recently; therefore, statistics are not available.

We thought, perhaps, that units operating tricycle-landing-gear-equipped planes might be able to furnish us with some information concerning any experience they might have had under these conditions.

Anyone having knowledge of any cases, please drop a line, with pix if possible, containing the details available or AAR identification; if one was submitted, to the Director, NASC, Attn: A & R Project Officer.

FOREIGN OBJECT INSPECTION—A recent inspection of a certain squadron aircraft parking ramp resulted in finding enough foreign material to fill a large paper sack. This foreign matter consisted of seemingly innocent little items, nuts, pebbles, bolts, safety wire, which can be sucked up by a jet engine (or blown in by another engine) and end up whirling about in the compressor. One thing is certain, these foreign items in the engine can cause an immediate violent explosion or it will set up a failure potential.

Occasionally a wrench or other tool is unintentionally left behind when a mechanic's work is completed. Observance of the following simple rules will save money as well as possible lives: (1) Police ramp areas regularly, (2) Don't run up tail to nose, (3) When taxiing, don't crowd the aircraft ahead of you, and (4) Use a strong light to inspect compressors before each day of flight.—*2nd MAW, MTG-20* (See *Approach*, February 1956, page 36 for additional details on how and why foreign object damage is Jet Engines Enemy No. 1)—*Ed.*

Ground Up

**Notes and Comments
on Maintenance**

FROZEN MICROSWITCHES—When operating in weather cold enough to freeze water, a check for frozen microswitches during your pre-flight can pay handsome dividends.

WHERE'S THE BOSS—During the acceptance check of an F9F-8P, a hydraulic leak in the nosewheel well was being investigated. The main inverter had been removed from the nosewheel well. While troubleshooting, NC-5 power was supplied to the aircraft. The auxiliary hydraulic pump was turned ON to pressurize the hydraulic lines. This power was also supplied to the inverter leads in the nosewheel well, which were unmasked and hanging free.

When the mechanic commenced searching for the hydraulic leak, he turned in the cramped area of the nosewheel well, struck the inverter lead and caused the hot end of the lead to come in contact with two lines on the port side of the nosewheel well. These were: the line from the gear emergency extension air bottle to the nose gear and the hydraulic line to the port wingfold mechanism. As the hot lead came in contact with these two lines, it acted like a cutting torch and burned holes in both lines. The escaping high pressure air and hydraulic fluid formed a highly flammable mixture. The continued arcing of the hot inverter lead ignited the mixture and a very hot fire followed in the nosewheel well.

The aircraft received substantial damage but, fortunately, no personnel were injured.

The primary cause of this ground accident was maintenance personnel error: the man who removed the main inverter had failed to mask the loose leads in the nosewheel well and failed to place "DO NOT USE" signs on the battery switch and external power connection; the hydraulic system troubleshooter failed to obtain the electrician's okay to supply power to the plane; and finally, the man supervising the check erred in that he allowed both of the foregoing errors to happen.

Had the supervisor been actively checking the work on the plane, the masking of electrical leads would have been done properly and electrical power would not have been applied with the aircraft in an unsafe configuration.

RECAPS OKAY FOR JETS TOO—Recapped tires have been successfully used on all types of aircraft with an excellent history of satisfactory performance, BuAer says in FUR Digest 2-55.

Operating activities have had some apprehension in using recapped tires on jet aircraft because of the high landing speeds. Exhaustive tests of recapped aircraft tires have been conducted on laboratory dynamometers and on aircraft in service use. The results of these tests have conclusively indicated the ability of recapped tires, processed by approved commercial recapping facilities, to meet the specifications, tests and performances required of new tires. It is natural to expect some failures of recapped tires, just as some failures of new tires are to be expected.

Since the peculiar service of jet aircraft tires does not subject them to extensive use before treadwear requires replacement, carcass fatigue is not significant as is the case of automotive tires. It is definitely feasible to recap aircraft tires at least one time.

In other words, in the case of recapping aircraft tires, it's merely a matter of replacing burned-off tread since the carcass has experienced very little actual operation and is usually in first class shape. It is true that some commercial recappers can make treads stick better than others. However, experience, improved quality control and better materials have resulted in the supply of recapped aircraft tires being for the most part satisfactory. In only rare cases have blown carcasses been reported on recapped tires, and then the trouble was not the tire itself.

Recapped tires from the supply system can be used with reliance on all naval aircraft. The Bureau of Aeronautics is continuing to exercise the strictest quality control on all aircraft tire contractors.

Plain tread and ribbed tread tires must be left in service until they are worn to the fabric in one spot. However, any cut, hole or crack which extends to the cord in the carcass is sufficient reason for a tire change, either to save the tire from further damage or to prevent a blowout. Any blisters or swelling at any point on the tire indicate that the tire has been damaged internally and is unsafe.—Nav-Aer 04-10-506

FROM THE GROUND UP

CONTINUED

RIGGING S2F WHEELWELL DOORS—Following the third touch-and-go landing, a waveoff was executed and the starboard main landing gear doors failed to close after the gear was retracted. The gear was recycled and the doors closed. Following another touch-and-go landing, the starboard wheelwell doors again failed to close. The gear was recycled but the starboard main landing gear would not extend. All attempts to extend the gear were unsuccessful and an intentional wheels-up landing was made on a foamed runway.

The aircraft crossed the end of the runway at about 20 feet altitude and continued to let down until 300 feet down the runway at about



A bent J-hook caused by improper rigging of the main gear up-lock, led to landing the S2F wheels-up.

15 feet altitude when the runway mobile control officer instructed the pilots to feather. The student copilot pulled the mixtures back to IDLE CUT-OFF and pushed the feather buttons.

The aircraft was leveled off just as the fuselage barrier guard began to contact the runway 1000 feet from the approach end. By maintaining wings-level in a flat attitude the fuselage barrier guard was ground down to within 8 inches of the fuselage before wing lift decreased to the point where the barrier

guard dug into the runway to a depth of about 2 inches. Then the aircraft weathercocked to port causing the starboard wingtip and a propeller blade on the starboard engine to strike the runway.

The starboard main landing gear up-lock hook, P/N 89L1018-4, was bent outboard $\frac{5}{8}$ -inch causing it to become wedged between the up-lock roller and the outboard roller support bracket causing the starboard main landing gear to remain retracted. The length of the actuating linkage between the up-lock hook and the outboard wheelwell door had not been adjusted in accordance with the S2F Maintenance Instructions (ANO1-85SAA-2).

A ground check of the landing gear on this aircraft also revealed a malfunctioning landing gear timer check valve, P/N 159480-3, causing the wheelwell doors to start closing before the landing gear was up which intensified the linkage adjustment error and caused the up-lock hook to be bent far enough outboard to wedge between the roller and supporting bracket and prevent the extension of the starboard main landing gear.

The same error in adjustment had been made on the port landing gear of this aircraft and the up-lock hook was bent $\frac{3}{8}$ -inch outboard.

The reporting unit made an inspection of all its S2F aircraft and found three others with this same discrepancy.

FJ SPECIAL TOOLS AND GROUND HANDLING EQUIPMENT—Tight and crowded quarters, particularly aboard carriers, require the use of special ground handling equipment to quickly move and spot airplanes.

Special securing and protective gear is needed to provide against damage to the airplane by exposure to high winds and salt air. The intricacies of the inner workings of an aircraft often demand maintenance tools that are non-standard for easy access, exact fit or precise strength. The aircraft's special tools and ground-handling equipment are designed specifically to fill the need of the correct tool for the correct job.

For a pictorial listing of these various contractor-supplied special tools and ground-handling equipment used to service and main-

tain the *Furies*, ask your Tech Rep for a copy of North American Service News of 7 September 1956, or write to North American Aviation, Inc., Columbus, Ohio.

TV THROTTLE INSPECTIONS—A worn throttle control quadrant in the front cockpit of TV-2 which permitted the front throttle to be placed in the OFF position resulted in a flameout during a landing. The pilot in the rear cockpit had moved the rear throttle to the IDLE position.

Inspection revealed that plate assembly, part number R83-LH-455660, was excessively worn. The reporting unit discovered three other aircraft with a similar condition. It recommended immediate as well as periodic inspections of TV throttle quadrants to insure that throttle cannot be placed in the OFF position from the rear cockpit.

POOF!—As a mechanic looked into the tailpipe of a jet to see if the fire was completely out an explosion occurred. His face, ears, neck,



shoulders, arms and hands were burned.

The explosion was caused by a partly-opened throttle which allowed fuel to accumulate.

Always insist on the pilot rechecking the throttle to make sure it is not left partly open and use protective equipment where possible when performing this type work.



Murphy's Law

* If an aircraft part can be installed incorrectly, someone will install it that way.

MURPHY WINS AGAIN

The pilot of an SNB-5 was returning from an authorized GCA training flight. Neither electrical nor manual operation of the landing gear was possible. The pilot landed the airplane with the warning horn blowing, a red landing gear light, and without being able to see the landing gear visually. On landing the right landing gear collapsed completely while the left landing gear remained in a partially extended condition. The left landing gear slide tube bent upward at the midpoint, preventing collapse.

Subsequent investigation disclosed the right landing gear was swinging free in the trail position, but could be neither locked nor unlocked. Insufficient thread remained on the lower eyebolt of the landing gear chain to permit proper jamming of the check nut once tension on the chain was adjusted. At overhaul identical eyebolts were installed in error on both ends of the landing gear chain, thus resulting in the wrong eyebolt being installed at the bottom. The installed eyebolt was not long enough to permit proper installation of the check nut after tension adjustment. The two nuts on the assembly backed off, permitting the chain to drop free.

The primary cause of this accident was listed as material failure of the landing gear mechanism. A contributing factor was maintenance personnel error in installation of the wrong part.

The accident board recommended that:

1. All activities having SNB/JRB aircraft inspect for installation of proper eyebolts.
2. A locknut be prescribed in place of check nut.
3. Present inspection procedures be altered to provide a manual jamming of the installed check nut on each inspection of the aircraft in lieu of the present visual check.

the Tip-tank

Miscellaneous aviation safety information

POCKET CHECKLISTS

Specifications and recommendations for future production of pocket-sized checklists for single-place aircraft have been approved by BuAer. The checklists are to be prepared by the aircraft manufacturer with revisions issued as necessary to keep them current.

MORE CRASH AND RESCUE INFO

Crash, Rescue and Fire Fighting data for all *Constellation* series aircraft, including the R7V, WV-2 and WV-3, is contained in the July-August issue of Lockheed Field Service Digest. If sufficient copies aren't available from your Lockheed Tech Rep, write Lockheed Aircraft Corporation, Field Service and Training Division, Burbank, Calif.

It is suggested that station safety officers assist crash fire chiefs in obtaining a file of these manufacturer's booklets, now available as well on all Douglas and North American Navy model aircraft.

Complete information on most all models of Navy aircraft is available in the new U. S. Navy Aircraft Fire Fighting and Rescue Manual (NAVAER 00-80R-14), which may be requisitioned on form NAVER-140 from the nearest major Aeronautical Publications supply point.

NEED FIELD SHOES?

BuAer Instruction 7820.16 dated 27 June 1956 may be of help to your storekeepers in financing the procurement of type N-1 field shoes for pilots and aircrewmembers.

INTRODUCTION

Maintenance of a Transitional Training Unit for the Pacific Fleet has been assigned as a permanent task for Composite Squadron Three at Moffett Field.

The unit's mission is to indoctrinate carrier pilots and personnel in operational and maintenance procedures for new aircraft. A maintenance and pilot course of about seven weeks will be convened for each carrier squadron prior to initial receipt of an airplane model which is in a fleet introductory category.

In its one year of existence TrnsTUPac has transitioned pilots and maintenance personnel in the E7U and FJ-3 and materially assisted in attaining better carrier pilot proficiency with a reduced accident rate.

SQUADRON IDEA

Two accidents involving "squadron idea" modification and substitutions of shoulder harness or inertia reel components resulted in one fatal, and one partial paralysis case.

New ideas and concepts are always welcome, and a theory, design or idea submitted on NavExos Form 2374 and NavExos 2375 (Invention Form) gives it to the right people. Or a letter to the Chief, Bureau of Aeronautics via appropriate channels will receive proper consideration. Putting your theory in an airplane and letting your buddies "prove" it is a poor way to try to assist with research and development.

FROZEN CONTROLS IN TV

Several cases of T-33 controls freezing in flight were reported by one USAF base. While the aircraft were parked, rain got into the cockpits and settled in the control stick wells. This later froze at altitude and locked the stick. There are drains provided to prevent this problem, but these were apparently missed on the inspection.

This also applies to Navy TV-2 aircraft.

SHUT THAT DOOR

In one of their technical talks for pilots the Airline Pilots Association noted a case where a supposedly locked front entrance door on an R4Y opened in flight enough to depressurize the aircraft. They recommend that one crewmember be specifically responsible for checking that this door is securely and actually locked.

COSTLY METHODS

The Advanced Training Command at Corpus Christi noted that aircraft accidents occurred within the command where operations, GCA and ASR personnel failed to take adequate action in control of airborne aircraft during inclement weather.

As the letter says, "This is a costly method of disclosing deficiencies in a command."

Commanding officers were directed to thoroughly review their operations, GCA and ASR functions and duties with particular emphasis on the procedures employed in alerting GCA and ASR personnel.

It is paramount that controlling activities be cognizant of the high fuel consumption of jet aircraft, and that prompt and accurate control of all aircraft is a necessity.

And by the same token, it behooves pilots to alert GCA in the remarks column on the DD175, as well as by radio as soon as possible.—Ed.

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OLD PRO CLUB



Robert A. Costigan, Lt.(jg.), USN

Aircraft: S2F-1, VS-27

While making night FCLP landings, the port wheel assembly sheared off on a normal touchdown. Lt.(jg.) Costigan applied full power and took off again. He later demonstrated great ability in landing, "wheels" down, in the field arresting gear with no further significant.

A. L. Alexander, Lt. (jg.), USNR

Aircraft: F2H-3, VF-23

Lt. Alexander was wingman of a CAP section that entered the overcast at 2500 feet and was continuous IFR at 37,000 feet. At that altitude, one engine flamed out and he lost his section leader. He transitioned to his own instruments, and almost immediately, lost the second engine. On instruments with no power and no cabin pressurization, Lt. Alexander established a descent to 23,000 feet and secured light-offs on both engines. He was vectored to the ship and made an instrument penetration, breaking out of the overcast at 800 feet.

Joe P. Howell, Jr., Lt., USN

Aircraft: AD-6, VA-85

At 7000 feet, 83 miles from his carrier, Lt. Howell experienced a partial power failure with severe engine vibration. The aircraft had insufficient power to maintain altitude. Lt. Howell demonstrated outstanding performance in returning to the ship, penetrated a thin overcast, and made a 360-degree descending approach with a slight S-turn on final to successful carrier landing.

William B. Bircher, Lt., USN

Aircraft: UF-1, NAS Agana, Guam

After several low inspection passes during which he determined that the landing area was clear of obstructions, Lt. Bircher made a scheduled water landing in the sheltered portion of an atoll lagoon. During the touchdown, a submerged object (possibly a large sea turtle) ruptured the hull and water poured into the aircraft. The electric bilge pump failed, so the pilot had the hand pump manned and had all possible weight shifted aft to the tail of the plane. He then taxied the UF-1 approximately six miles through rough water to a suitable beach, lowered the landing gear, and taxied up onto the sand.

Recognition of heads-up flying is essential to a positive program of flight safety. Each month, Approach will acknowledge certain selected individuals whose exhibited flying ability merits membership. Old Pro's also receive a wallet membership card as a memento of the occasion. Commanding officers are invited to submit nominations for selection.

NOTAM

NGU
165+265/506

NOTAM NGU URGENT X ATTENTION ALL AIRMEN CAUTIONED TO BE ON ALERT PERIOD 24+25 DECEMBER FOR EXPECTED HIGH DENSITY LOW LEVEL TRAFFIC EXPECTED DURING SUBJECT PERIOD X MAINTAIN PARTICULARLY VIGILANT LOOKOUT FOR SINGLE LOW FLYING CRAFT VICINTY ALL POPULATED AREAS X SUBJECT CRAFT DESCRIBED AS SINGLE PLACE MULTI-DEER PROPELLED TRANSPORT IN OVERLOAD STATE MAKING NON-STANDARD LETDOWNS AND APPROACHES EN ROUTE FROM POINT OF DEPARTURE LAT 90N LONG 100 WITH EDT 1200 LOCAL X ADIZ PENETRATION PROCEDURES WILL NOT APPLY X ALL CONCERNED UNITS DIRECTED TO ASSIST EXPEDITIOUS COMPLETION OF MISSION WITH APPROPRIATE VIP WELCOME AND SERVICING AS INDICATED X TO INSURE COMPLETE SUCCESS OF THIS OPERATION EXTRA CARE URGED FOR ALL AIRMEN ON ALL HOME FOR CHRISTMAS FLIGHTS X ONLY IN THIS MANNER WILL OPERATION MERRY CHRISTMAS BE ACCOMPLISHED X CINC NICK SENDS X 0 1000 1Z

